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How That Honey Jelly Is Made

By Observer

THERE are two ways of making honey jelly. Using one recipe, the honey is boiled. The other way the honey is not heated hotter than 160° F. Those who think honey is spoiled by any approach to boiling may therefore make jelly by a method which has no possibility of destroying any honey flavor, no matter how delicate.

Although I said, in the first article, that making honey jelly was an extremely easy process, exactly the same method cannot be followed with all honeys. The recipe must be varied somewhat, depending largely on the density and the acidity of the honey. For instance, with normal honey of good body and no unusual acidity, the following recipe may be used:

Recipe

- 1 pint water
- 1 pkg. (3 oz.) Stewart's fruit pectin
- 3½ lbs. extracted honey

If the honey is very dense, as western sweet clover honey, more water should be used, or the jelly will be too stiff. If, at a first attempt, the jelly sets too quickly and too stiff, merely reheat it and add another measured quantity of water, until a fine tender jelly is secured. When once the proper proportions are found, the recipe for the honey you are using should be kept for future use. I have made a jelly of good, tender consistency that would stand up well, using as much as seven and a half pounds of honey to one package of pectin, but this was a rather thin sage honey containing considerable natural acidity.

This experimenting to find the right recipe to use for your honey, and to make a jelly that suits your taste, is rather fun. If you use too much honey the jelly may be quite sticky and will string out like honey, but it is not spoiled because of that and is

still just as good to eat as it was before. Or, if you use too much water and get a honey syrup, that is good, also, to eat on cakes and waffles, or you may, if you are anxious to have a jelly and are not merely working to get your recipe correct, take that honey syrup and add some more pectin to a little water and reheat the mixture. Any way you do it, there is no boiling and you will not waste and spoil any honey—all honey is GOOD HONEY, just as honey, or as honey syrup, or as stiff jelly, or as tender jelly of exactly the right quality. And after your recipe is worked out you can repeat the process again and again.

Directions: Weigh the proper amount of honey into a stew pan and heat it over the fire, constantly stirring, to 160° Fahrenheit, and set it aside. In another stew pan bring the water to a boil (one pint, more or less, as the honey you are using requires). When it boils stir in the package of fruit pectin and boil and stir until it is thoroughly dissolved. (This requires only a few minutes.) Now pour this dissolved pectin solution into the pan containing the hot honey. Put on the fire and heat while stirring to about 160° F; 180° F. may not spoil the honey, but do not boil it. If you approach the boiling point the mixture will become very full of small bubbles and the jelly will set before the bubbles can rise to the top. This injures the appearance of the jelly, of course. When the honey is well heated and the pectin thoroughly stirred in, set the pan aside for one minute, then skim and pour into glasses quickly. If you do not pour it soon enough the jelly will be flaky and not clear. The jelly will set in about one hour. If you have used a little too much honey, or a little too much water, it may require over night to set into a very tender jelly.

Should you desire to make a honey jelly using fruit juice, use any kind of fruit juice to replace the water in the above recipe, following the same directions in all other respects. Paraffine the jelly while hot.

The recipe using Certo pectin is as follows:

- 2½ cups (1¼ lbs.) honey
- ¾ cup water
- ½ bottle (½ cup) Certo

Directions: Measure honey and water into a large saucepan and mix. Bring to a boil over hottest fire and at once add Certo, stirring constantly. Then bring to a full rolling boil and immediately remove from the fire. Skim, pour quickly. Paraffine hot jelly at once.

Although this recipe calls for boiling the honey and water together, the result is not so serious as you might expect. Quick boiling of a small quantity of the mixture, and equally as quick cooling, injures honey comparatively little. But if you were making jelly in sixty-pound lots it would be a different story.

You will notice that these recipes call for paraffining the jelly to make it keep well. That isn't any use in my family, because honey jelly is always eaten up before it has any chance to spoil.

Certo, of course, can be bought almost anywhere, but the prepared fruit pectin, which is a powder containing pectin and acid from citrus fruits, is not on general sale as yet. I buy it from E. W. Stewart & Co., 40 South Clinton Street, Chicago, at \$3.50, postpaid, for a case of twenty-four three-ounce packages.

I am still enthusiastic about honey jelly, and I haven't found any honey lover who is not. And, besides, many people who will not eat honey are delighted with this new slightly acid delicacy.

Honey Week Did Reach Home

HERE are a few bits of information about what happened Honey Week. There has not been time to learn more. The facts given are based on voluntary reports.

The big thing about the Institute is its stimulating force. It builds in beekeepers a desire to help themselves which manifests itself in action. After they see the effects of a promotional program like Honey Week, they try it out at other times, which is the very thing they should do—not one Honey Week, but fifty-two Honey Weeks.

Retail Stimulation

So many ideas work out of it. For instance, one large wholesale distributor of honey, with material furnished by the Institute, found it possible to get a sizeable retailer to broadcast honey information locally and so to stimulate sales of honey to the extent of one full carload. It certainly won the help of the beekeepers' women folks in giving demonstrations that are bound to bring enthusiastic results. Mrs. Floyd Markham, of Michigan, writes of her demonstration, including talks at the Ypsilanti High School, followed by a honey demonstration. She was busy the whole week.

How a State Takes Hold

The work done in California shows the way in which a state may use the occasion. Publicity was given in over a hundred newspapers and articles prepared for bakers' and grocers' magazines. The governor made a proclamation on National Honey Week. Over thirty service club programs were put on. Seventeen hundred letters were sent to beekeepers to get them to put up exhibits and a great many were installed.

Broadcasts were given over KFI, KQW, KQO and KPO, followed up with the sending of honey recipes on request. The work was in charge of Mr. Krebs, the new inspector of apiaries, with the able assistance of Mrs. Krebs.

Honey Products

Those who are interested in using honey in other products took part also. As an instance, the Hagaman Baking Company of Cleveland, Ohio, during National Honey Week, put up a honey exhibit with baked goods which resulted in moving both honey and their own products to advantage. This went on in many places.

Keeps Our Aids Busy

That the various broadcasts by food concerns bear wonderful fruit is evidenced by the report of Mae Pauline Chesnut, of the Home Service Department of the Gold Medal Flour Company in Minneapolis. She

says that in response to radio requests they sent out 1200 copies of a honey sheet prepared for distribution. Their fall radio school, with an enrollment of 15,000 radio pupils in every part of the country, are getting copies of the wonderful Honey Orange Almond Cake which was broadcast during Honey Week. They have also distributed honey sheets at cooking schools given by members of the Home Economics Department of the Company. So, they have been kept busy as a result of their broadcast.

Another concern, the Malleable Iron Range Company of Beaver Dam, Wisconsin, in the "Monarch Bulletin," a widely distributed house organ for home service purposes, giving recipes and advice to housekeepers, devoted an entire number in November to the story of honey and honey recipes, the very best recipes that have appeared, and 5000 copies were sent by them to home economic leaders and cooking school instructors. There are still about 1500 of these Monarch Bulletins available at the Institute office at 2 cents each, or six copies for 10 cents. They are worth seeing.

Publication Help

In California, the Sunset Magazine, a friendly western magazine of ideas, publishing a supplement called the Sunset Cooperative Grocer, in the interest of cooperative grocery and home economic service, edited by Genevieve Callahan, home economic director of the Sunset Magazine, published on Thursday, October 15, a honey suggestion with pictures for the use of honey with waffles. Over 60,000 of these were distributed.

I think the most noteworthy example of the stimulating effects of the Institute material comes from an article in the Bakers' Helper of October 24, about National Honey Week being a good time to introduce honey items. The bakers took Miss Fischer at her word and this well prepared article in that number stimulated tremendous interest among the bakers. Eighty-nine bakers in twenty-seven states wrote in of their own accord to the Institute for outlines and recipes as the result of this one article.

How Honey Week Grew

In addition to preparing programs for beekeepers, outline talks, broadcasts, newspaper and magazine copy, the Institute stimulated forty-five Chambers of Commerce, including that of the United States; sent special announcements to the Home Economics Women in Business of the American Honey Economics Associa-

tion; sent out fifty sets of material to local radio stations; special letters to secretaries of state beekeepers' associations and university bee specialists; announcements and articles in trade magazines; newspaper articles; outlines of honey demonstrations to home service workers; effected the distribution of about 60,000 of the little Honey Week stickers, which entered twenty-three states and one foreign country; prepared for exhibits in stores, ice cream parlors, restaurants and hotels, banks, schools, candy and bake shops; furnished to beekeepers and others in twenty-three states and three other countries over 5000 of the National Honey Week programs.

Broadcasts

National broadcasts were given by Colonel Goodbody, of A. & P., over the blue and red network; by Mary Hale Martin, of Libby, McNeill & Libby, over the eastern, central and Pacific Coast stations; by Betty Crocker, of Gold Medal, over the National Broadcasting chain; by Sarah Jordan in her Woman's Review Hour over the National Broadcasting chain, during Honey Week. In addition, twelve states gave local broadcasts from colleges or by home service workers.

Housewives Know About It

Honey recipes were included in the November numbers of Pictorial Review, Woman's Home Companion, Better Homes and Gardens, American Cookery, Ladies' Home Journal, Canadian Home Journal, and other farm magazines and weekly papers. Dr. Evans, in his "How to Keep Well" of October 26, recommends honey.

Kellogg Scores Again

In addition to the food companies mentioned, we should not forget our old friend, the Kellogg Company, who sent special directions to their managers in every district and to all their salesmen to arrange cereal and honey combination exhibits in stores during that week. They also furnished National Honey Week posters to their own salesmen and to beekeepers free, and honey leaflets to grocers and to beekeepers for distribution.

A Ham Ad

Swift's Premium Ham advertised a recipe for ham basted with honey and maraschinos in their November advertisement which appeared in the largest November national magazines.

But we could go on indefinitely. It is sufficient to end by repeating the title of this report, that "Honey Week did reach home."

G. H. Cale.

Death of W. S. Pender



The "Australasian Beekeeper," in its October number, announces the death of one of its editors, W. S. Pender, a member of the firm of Pender Bros. Mr. Pender was an experienced apiarist and a dealer in bee supplies, besides having been editor of the "Australasian Beekeeper" at West Maitland, New South Wales. He made a trip to America several years ago and we had the pleasure of his visit. He died of pneumonia, after a short illness.

Two Interesting Studies

The editor acknowledges the receipt from Dr. Irwin C. Alphonsus, of the Division of Entomology of the Minnesota Agricultural College, of two microscopic studies, described with ample cuts, of a one-eyed bee, and also of the *Braula coeca*, or bee louse. The latter study is made jointly with Mr. Erdman Braun. Both works are reprinted from the Annals of the Entomological Society of America. Four plates accompany this work.

The beekeepers of America must feel proud of having such able students in the ranks of the entomologists.

Superior Honey Company Reports Package Changes

The demand for honey in glass fruit jar packs with "window" tops which makes the product visible is increasing, according to T. L. Ball, assistant manager of the Superior Honey Company and president of the Utah Beekeepers' Association. The housewives like these jars, the "utility" pack, Mr. Ball points out, be-

cause they use them each year to put up fruit in them.

The glass tumbler pack, which was so popular years ago, Mr. Ball says, is passe now, and Utah and Idaho plants of the Superior Honey Company are not packing them any more.

"Creamed honey is the coming thing," says Mr. Ball, "its popularity increasing daily. While this pack does not look so well in glass jars because of its white color, it is excellent in enamel-lined cans. Our creamed honey machinery is being kept busy this year."

A New Nature Book by Frank C. Pellett

Two things a good nature book should do. One is to transport the reader to the outdoors to live with the author, through the book's pages. The other is to cause him to finish the book with the determination to put into practice some of the things he has read. And it is just those two things that Frank C. Pellett's new book, "Flowers of the Wild," does.

One not only wants to re-read it to gather what he has missed, but he has the determination to get out with a basket and a spade next spring, to wander in the woods and learn to enjoy the wild plants and flowers, to get fixed in his mind the environments under which these plants live, shade, sun, drought or dampness.

Then he wants to gather some of the plants and transport them to a little plot at home where he may enjoy them when his time is too limited to go to the fields and woods. He gets an appreciation of the plants and doesn't want to disturb them unless he can make pretty sure that the move will not kill them. Better to enjoy from a distance than to destroy.

"Flowers of the Wild" takes up the flowers by the cycle of the seasons, tells how to make a wild garden, gives a list and a description of plants with poisonous qualities, and also a careful analysis of what each individual plant wants in the way of moisture, sunshine, and feeding material.

The last chapter is devoted to "Plants and their guests," just a hint of what attraction there is in studying the inter-relation of insects to the plants themselves.

The book is profusely illustrated with four color plates, 104 halftones, and contains 168 pages. It is attractively cloth bound.

Mr. Pellett has done a fine work. It gives one the desire to place it on his ready reference shelf where it may be referred to often.

The book is published by De La Mare as one of their attractive line of nature books.

M. G. Dadant.

Figures from Saskatchewan

Returns for 1931, based on 1466 beekeepers, show that Saskatchewan had 7316 colonies of bees, gathering an average of 83.3 pounds of honey per colony, or a total of 609,480 pounds of honey for the province for 1931—11 per cent less than last year. In view of the fact that central and southern Saskatchewan faced the most severe drouth of its history, these returns are encouraging.

The greater proportion of the honey was obtained in northern and eastern Saskatchewan, but even in the center of the drouth area considerable honey was secured after the rains in July, many beekeepers reporting one hundred pounds during August. Farmers in the drouth area tell us that bees were the only thing on the farm which brought returns.

Honey prices have been lower this year, comb honey averaging 22.2 cents per pound, extracted 11.5 cents, the total production being valued at \$73,301.48.

R. M. Pugh,
Provincial Apiarist.

A Child's Life Garden

The only safe elements for soul development are fresh air, sunshine, sympathy, and laughter. These are harmless, and they induce the growth of glorious blooms of character.

Teach the dear child in your care that life is a garden and God has given him a little corner of it to tend. Liken his characteristics to various kinds of flowers, fruits, plants. The similarity between human traits and Nature's gifts will automatically suggest itself to you. You will find that the tiny human being will assimilate such teachings even as a rose drinks in the refreshing dews and warm, life-giving showers of rain.

How much better to be a gardener with something definite to cultivate than a mole, groping, groping in the dark and never doing anything better than to fill the fields and gardens of the world with ugly little hills!

Lida Keck-Wiggins.

A Bee Tree Strikes Back

Fred H. May, of Meredosia, Illinois, sends us a clipping concerning the death of Abner Crunk, at Lightner Hospital, resulting from a crushed skull when a bee tree fell on him. Crunk and Percy and Roy Gill, all of New Haven, Gallatin County, were cutting down the bee tree to get the honey when some accident caused the injury, the tree striking Crunk severely enough to cause his death.



Good Advertising

Beekeepers who sell their product to a local trade have a very special opportunity to do extensive advertising at small cost. There are few business men who would be invited to place an advertisement for their goods in the show windows of the most successful merchants, but the beekeeper has just that opportunity. Live bees never fail to interest the public, and a well arranged exhibit of honey with live bees in observation hives is usually welcome almost anywhere. The merchant likes to have such an exhibit in his window because it attracts so much attention. If the beekeeper is wide awake he will have several such observation hives and keep them in use somewhere in his trade territory for several weeks every year. Because the honeybee is recognized as a symbol for thrift, the banks are quite favorable to having such an exhibit placed with them. Beekeepers who do advertise consistently and extensively seldom complain of slow sales. They keep their names and products so constantly before the public that they sell their honey readily and at good prices.

Some ingenuity is required to prepare an attractive exhibit and put it in place. This should be changed frequently and not left too long in one place. There are few selling opportunities of equal promise that cost so little money.

Go Easy

Just what does a hen think when she broods her eggs for a week longer than she expects and then hatches a brood of ducks? It is to be hoped that Congress will scrutinize with especial care the eggs that they start incubating at this session, for most of the last lot hatched ducks. The big appropriation for the farm board made things worse instead of better. By pegging the price of cotton too high above world markets, the foreign need was met from other countries and we still hold our cotton—at the expense of the taxpayers. Boosting the tariff brought retaliation from other countries and we lost our foreign trade. Had there been no special session of Congress the country would have been in much better condition today.

Natural Foods

Mahatma Gandhi in his loin cloth, on his official visit to England, has attracted world-wide attention to his peculiar habits. The goat which he took with him to provide his food won a blue ribbon in an English show.

Columns of space have been given to Gandhi and his use of only natural food. Besides the goat's milk, he is reported as depending mostly on nuts, fruit and honey. It is said that goats have increased greatly in popularity since he came to England. Perhaps there will also be increased interest in baked apples and honey as a result of the large amount of publicity given to his preference for these items in his daily diet.

The tendency to return to a simpler diet should be greatly to the advantage of honey if it receives sufficient notice. The trouble with such movements generally is that they tend to become fads and are unbalanced in their arrangement. Gandhi, by the use of goat's milk, nuts, fruit and honey, provides a fairly well balanced menu. The public seems unable to understand a man of Gandhi's influence and reputation insisting on reducing life to such a simple state. The beekeeper at least should profit from the attention which he has received from the press.

New Interest in Honey

Not in forty years has there been so much interest in honey on the part of the general public. Recipes calling for honey are appearing everywhere. A housewife recently remarked that she had never seen so much in print about honey and the various uses to which it can be put. In Iowa, eighteen hundred 4-H Club girls have been making a study of honey in baking under Miss Lulu Tregoning.

Bakers are using honey to an extent never before equaled. E. G. Brown, of the Sioux Honey Company, recently remarked that disposal of the dark grades of honey was formerly their most serious problem. Now it is the easiest to market and they are constantly on the watch to pick up more baking honey to supply the increased demand.

While it is true that we are in the midst of an unusual depression, when there is a tendency to reduce buying to the lowest possible point, honey is suffering less than most food products because of this new interest, which can largely be traced to the work of the American Honey Institute.

Two Beekeepers

Two men started in the business of honey production at about the same time. It was during the boom times when honey prices were high and profits were easy to obtain. Since that time there has been a big change.

At the time of starting both of these men were new to the business. Both were enthusiastic and for a time both did well. Now only one remains in the business. He spent his spare time in reading the books relating to his business and subscribed to all the current bee magazines published in this country. He kept in touch with the new bulletins and has been constantly on the watch for new developments. He has studied the cost of production of his product and sought ways and means of reducing his expenses while increasing his crop. By means of improved stock, proper equipment and more efficient management he has kept pace with falling prices and is still able to live comfortably, although with reduced income.

The other beekeeper prospered as long as prices were high. As soon as he became acquainted with the general methods of practice he stopped reading, did not attend bee conventions and drifted along with no change in his methods. When prices began to fall he found himself hard pressed to make ends meet. Soon he found he was running behind and his outfit was for sale. Now it is in the hands of the more efficient man and he is out of the business entirely.

The New Year

Once again we extend to every reader our very sincere wish for a happy, prosperous and successful new year. With a new season ahead let us profit by the misfortunes and mistakes of the years that have passed and press forward with determination to secure the benefits of the good things to come.

In many ways the year just closed has been one of the most difficult in modern times. We are just beginning to realize the cost of the world war and the heavy tax that it will levy during the lives of the present generation. Much of the cost is still to be paid and must be reckoned in any plans for the future by all the nations concerned. Let us hope that the lesson has been suffi-

ciently severe that mankind will find other and better means of settling difficulties in the future.

Our nation is fundamentally sound and the return of moderate prosperity is soon to be expected. For our own industry the prospects are particularly bright, although, at present, prices are distressingly low. So much interest in our product is apparent that we may hope for increased demand and better prices with the return of normal buying on the part of the public.

Our Bees in Winter

If we have taken proper care of our bees in the fall and have seen to it that the colonies were strong, with good queens and plenty of honey in the brood chamber, if we have packed them properly, we need not worry about them or disturb them in January.

A few things may have been neglected. The entrances may be so deep that mice may invade the brood combs and greatly disturb the bees. The entrance must therefore be reduced. But we need not worry about the snow that falls and covers the entrance, until it begins to melt and threatens to create a sheet of ice that will keep out ventilation or hinder the bees from taking a flight on a warm day. This must be looked after.

The brood chamber may be too vast. It may have a lot of dry combs which are not needed by the bees in winter. We have always used a division board or dummy which confines the colony within the space that they need, but reduces the useless space till more room is necessary, in spring.

One of the old writers on bees, I believe it was Heddon, wrote: "This business of ours is a business of details." It is indeed. The beekeeper who looks after the little details is the one who succeeds. Others may rely on "luck," but luck is only partly successful, for luck does not continue steadily unless we help it.

This is a good time to overhaul our empty hives and repair those needing it. We have made it a practice to repaint hives whenever they were empty. We find that the lower edge of the brood chamber and the top surface of the bottom board are the parts most likely to suffer from moisture and time. We have often had hives remain in use forty years, but it has been necessary to look after them and keep them painted. Do not neglect this.

Making Honey Popular

The French bee magazine "L'Abeille et le Miel," for October, contains a leading article by its editor, Victor Dumas, reproving the beekeepers for their lack of enthusiasm in the sale of honey, and saying that it would be impossible to secure a better recommendation for it than is given by the physicians, who are unanimous in recommending it for children, owing to its health-giving qualities.

He is correct. Can we ask for anything better than the recommendation given from time to time by authorities in medicine upon the healthfulness of honey? The magazine above named inserts a long article from a Spanish doctor, published in the "Bulletin de la Science de Pediatric" of Paris, Doctor Camilo Muniagurria, giving in several pages the evidence that honey—

"Is a pleasant food for the child;

"Highly digestible in connection with the intestinal diastases which are in charge of its transformations;

"Has a degree of fermentativeness to determine the reactions of the intestines;

"Is easily absorbed in its last intestinal transformation;

"Finally is easily adapted to its ulterior utilization.

The main objection to the use of honey in child feeding appears to be its scarcity.

Beekeepers, Mr. Dumas avers, are too neglectful. They are wasting the opportunities of making honey one of the most indispensable foods of children.

If the article in question did not contain so many scientific terms, difficult of translation and hard to comprehend, we should have inserted it whole in this magazine. But let us remember that honey only needs to be tried to recommend itself.

New Market for Package Bees

Prof. Paul Work, of Cornell University, is also editor of Market Growers' Journal, the leading publication devoted to the interests of the vegetable grower. Some months ago Prof. Work became interested in securing lower costs for the pollination of cucumbers when grown in greenhouses.

The current issue of Market Growers Journal gives the results of some experiments conducted during the past season. The common practice has been to buy or lease full colonies of bees for this purpose. Since so many of the bees are lost through flying outside and failing to return or from flying against the glass, the colony is usually of little value after a few weeks in the greenhouse.

To give a trial to package bees for that purpose, experimental shipments were sent to the greenhouses of Cornell University and also to four large greenhouse growers in the North.

Reports from all the users indicate entire success for the initial trial. Bees in every case arrived in good condition; there was no trouble in handling them on arrival, and with one exception every package maintained fair strength and activity during the time of cucumber bloom. The results were so satisfactory that it is recommended that the package bees be given further and more extended trial next season.

This should be a very encouraging report for our shippers of package bees. The total number of bees required for use in greenhouses is enormous, and if package bees should replace the full colonies in common use a new and very substantial market will be opened for live bees.

The Bee Kingdom Medal

The Editor of the American Bee Journal feels very highly honored by the Bee Kingdom League, which presented him with their gold medal in honor of his eightieth birthday. This international society, founded by A. Z. Abushady, publishes a magazine in two languages at Cairo, Egypt. Elsewhere in this magazine appears an article by Prof. H. F. Wilson, who represented the Bee Kingdom League in the presentation of the medal. The editor wishes to express his very sincere appreciation to the League, to Prof. Wilson, and to all who had a part in the occasion.

Honey Replaces Sugar

O. A. Sippel, state apiarist of Montana, sends us a recent newspaper clipping telling of the purchase of 2000 pounds of honey by the commissioners of Gallatin County. This honey is to be used in place of sugar in support of the county poor. The price mentioned is about seven cents per pound. It is part of the program to use local products wherever possible and thus keep Montana money at home.

Where honey is available in wholesale quantity at prices so near to that of sugar it is worth while to call attention of public purchasing agents to the advantage of using a home-grown product. This will in many cases insure an outlet where otherwise a market might not be available.

Quality Commands Premium

Selected merchandise always commands a premium over the average run of the same product. Even such a staple product as eggs displays a considerable variation in price, depending upon quality. There are poultrymen who guarantee a strictly fresh product, who put up eggs of uniform size and color and secure a comfortable margin over the prevailing market price.

Honey lends itself especially well to the cultivation of a quality market. Special attention to packing, grading and marketing makes possible a selling price much above that for which the greater part of the honey going into the trade is sold.



Further Information on Chlorine Sterilization of Beekeeping Equipment

By H. G. Ahrens and M. C. Tanquary
Department of Entomology, University of Minnesota

A complete comb sterilizing plant and an interested group of beekeepers at University Farm, St. Paul, Minnesota. The size of the wooden tank is 6 feet high by 6 feet in diameter. The cylinder, with a hundred pounds of liquid chlorine, is on the scales.

A BRIEF announcement of the chlorine sterilization of bee combs in the September number of this journal has brought many encouraging comments and a large number of requests for more information. It is the purpose of this paper to give the details of the method developed by the beekeeping section at the University of Minnesota, based on a great deal of experimental work and on its practical application in two apiaries in Minnesota. While the method given here is dependable for controlling American foulbrood, it is likely that further work which is under way now will simplify procedure somewhat be-

fore it is recommended as standard.

Chlorine Sterilization

Liquid chlorine is the cheapest and most efficient of sterilizing agents and has heretofore been overlooked as a possibility for use by the beekeeper. It has been used to sterilize public and private water supplies for the past twenty years. Today over 80 per cent of the public water supplied in North America is chlorinated water. Health authorities everywhere are recommending chlorine for the sterilizing of milk bottles, dishes, soft drink bottles, swimming pools, sewage, and drinking water.

Chlorine in the liquid form is a

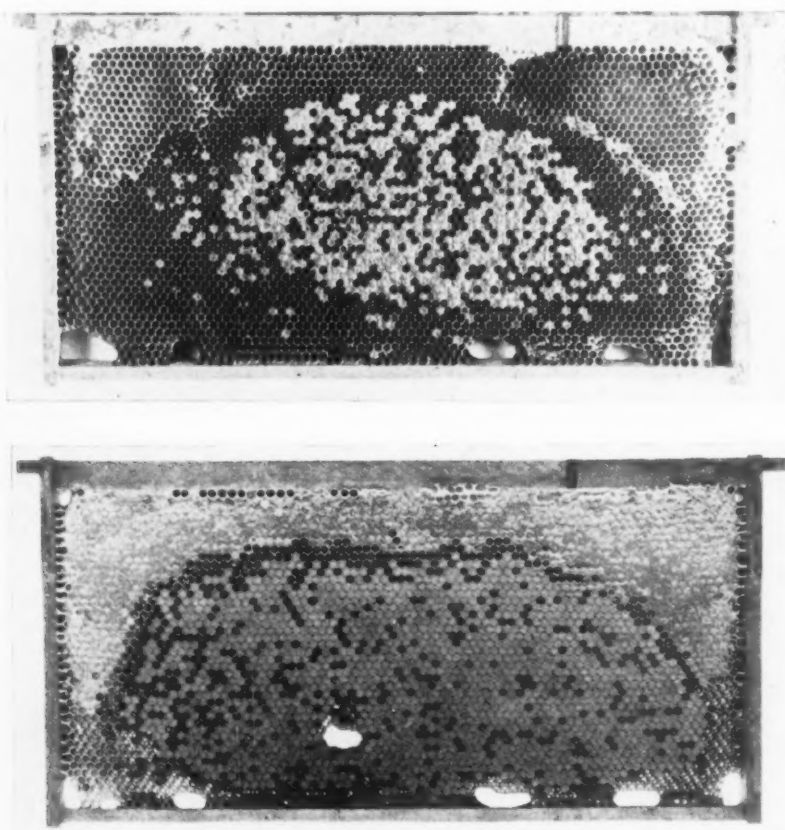
100 per cent sterilizing agent. It does not deteriorate in transit or in storage. Being perfectly pure, it is only necessary to measure a given amount by weight and apply it continuously to the water which is in contact with the material to be sterilized to obtain satisfactory results.

How Chlorine Works

Chlorine is only slightly soluble in water. At 10°C one volume of water absorbs about three volumes of chlorine gas and at 50°C only about 1.5 volumes. This solution is commonly called chlorine water. When chlorine is combined with water it unites with the hydrogen in the water, forming hydrochloric acid and oxygen. Because chlorine unites with the hydrogen of water and sets oxygen free, which in turn is capable of oxidizing substances, chlorine is spoken of as a powerful oxidizing agent. The oxygen liberated when chlorine acts upon water as explained is very destructive to all organic life; for this reason chlorine is used extensively as a sterilizing agent. Vegetative and spore forms of bacteria are destroyed by the oxidizing action. Theoretically the combination is thus: Chlorine gas plus water equals hydrochloric acid and oxygen. The amount of hydrochloric acid formed is very slight, while the amount of oxygen formed is enough to thoroughly oxidize the disease organisms.

Chlorine and Spore-Bearing Organisms

The experiments of (1) Tonney, Greer and Liebig on spore-bearing organisms was chiefly to determine the possibilities of killing spores in drinking water. They experimented with 142 strains of seventeen species, all of which were spore-bearers, and found a large variation in the concentration of chlorine required to kill these organisms in thirty seconds. The least resistant required 2.5 parts per million, or one pound of chlorine to 48,000 gallons, while the most resistant required 280 parts per



In each of the four groups of combs, the top ones are the diseased combs; the bottom ones are same combs after chlorine treatment and use again by the bees

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million, or one pound of chlorine to 430 gallons. This information reveals the fact that the action of chlorine is rapid, efficient and inexpensive as a sterilizing agent against spore-bearing organisms.

Chlorine and Spores of American Foulbrood

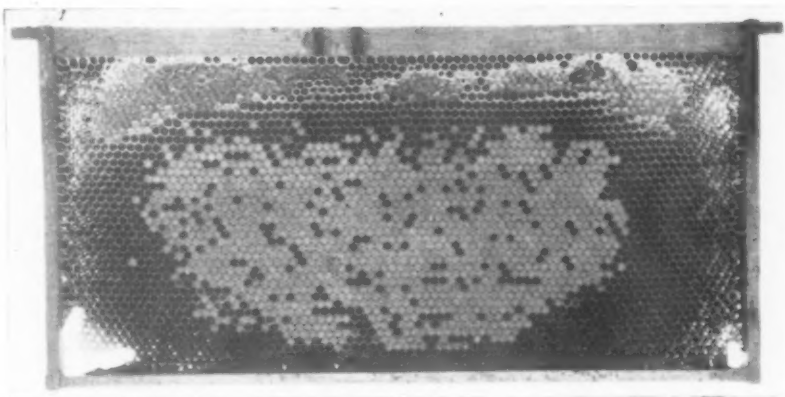
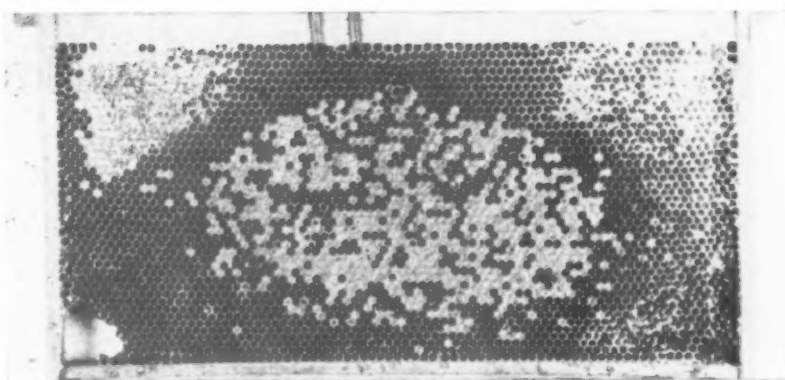
When the spores of *Bacillus larvæ* were treated with chlorine water containing 750 parts per million, the spores suspended in a thin film on glass were killed in six hours. When the scales of diseased material were soaked in 10 cc. of the same concentration, 750 p. p. m., they did not survive over twenty-two hours. When applying the above information to the department sterilization plant, 1500 p. p. m. were used over a period of forty-eight to seventy-five hours, depending on the size of container, in order to give a reasonable margin of safety. Scales were removed from combs treated in this manner and cultured in the laboratory. They were found to be sterile. In order to find out how the bees would react to chlorine-treated combs and to gain further information, they were given on May 20 to package bees started on foundation. The combs have been in the brood nest throughout the brood rearing season and the combs are as good as before, with not a single reoccurrence of disease in thirty-six test colonies. Four of the branded combs were photographed at the end of the brood rearing season.

Directions

There are four important points to keep in mind with reference to the treatment. First, the combs must be uncapped to allow excess honey to be dissolved and to allow pollen masses and dried scales to become thoroughly soaked with water. Second, the flow of gas into the water must be continuous, the rate depending on the capacity of the tank. Third, the amount of gas used is determined by weighing the cylinder. Fourth, the length of time of treatment is two days for small containers and three days for a 6x6 tank.

Place the infected combs, supers, or other hive parts, in any kind of empty container (preferably not a metal tank) which will hold water, placing the combs vertically so the water, which is to be added later, will enter the cells better. The combs may be left in the supers, in which case these should be "staggered" in order to allow free circulation of the gas-charged water.

All cells containing either honey or brood must be uncapped. The hive parts must be held down by weights or cross-pieces over the top of the tank so every part is fully submerged. The tank is then filled

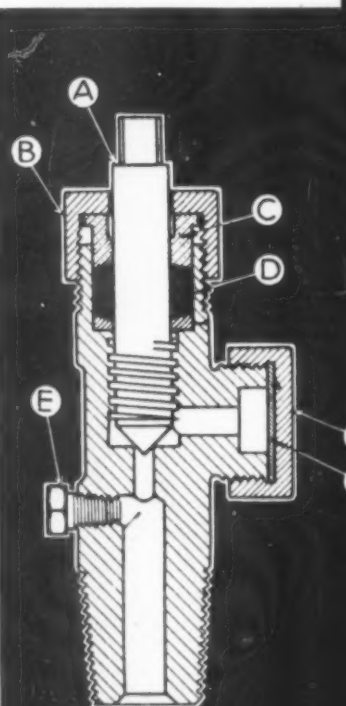


The four combs selected for treatment were the worst ones that could be found. Two-thirds of the cells had scales of American foulbrood. (Top diseased—bottom clean, same comb).

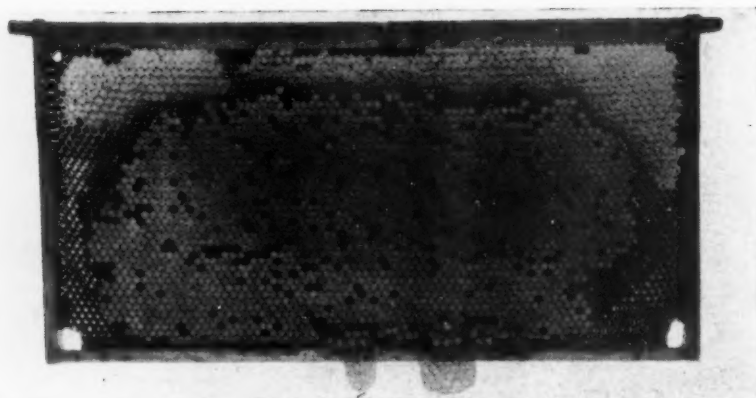
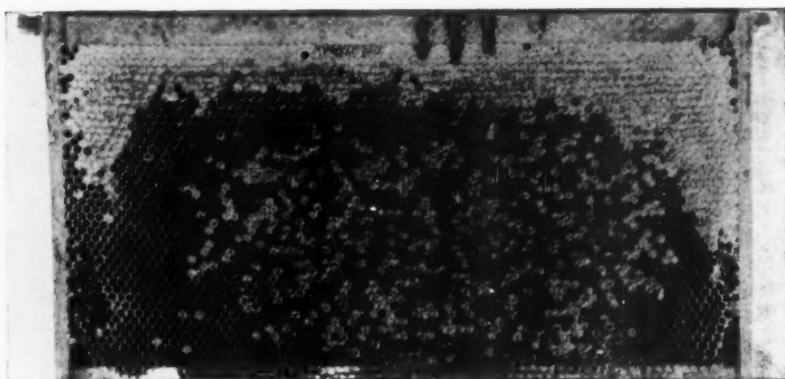
with water. If the combs have scales, hard pollen masses or honey in them, they should be allowed to remain in this water for about twenty-four hours to dissolve the honey and soften the scales and pollen masses. This water is then drawn off and run into a sewer, or a hole which has been dug in the ground nearby and which is then filled in to prevent any possible exposure of contaminated material. If one is treating combs not containing honey, scales, or hard pollen masses, or containing but a comparatively small amount of such material, this preliminary soaking is unnecessary.

The tank is then filled with water a second time and the chlorine gas added as follows: Place the cylinder which contains liquid chlorine on a scale by the side of the tank. This cylinder should be fastened so that it will not be knocked over. Unscrew the valve protecting cap, unscrew the protection nut "F" and connect a garden hose to lead the gas to the bottom of the tank. Chlorine will attack rubber slightly, so that it may be necessary to replace these parts in time.

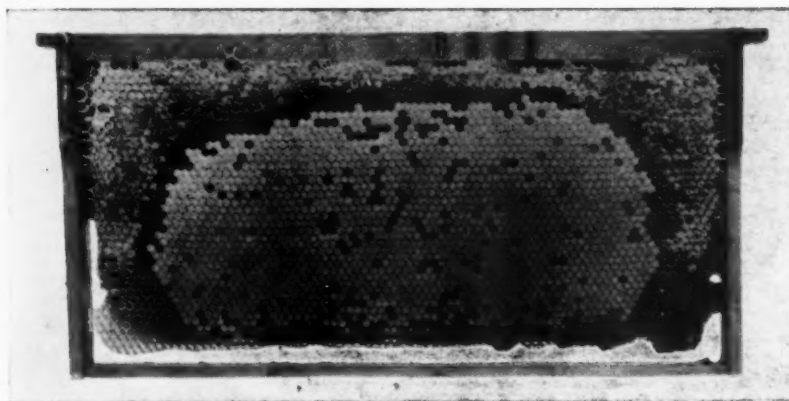
Now open the large valve "A" very gently. The chlorine which is in liquid form under pressure in the cylinder changes to gas when released through the valve. Control the flow of this gas so that small bubbles about the size of a pea come to the surface of the water and so the cylinder will lose in weight from one or two ounces an hour in case



Chlorine Institute standard valve. "A," valve stem; "B," packing nut; "C," packing gland; "D," packing; "E," fusible plug; "F," protection nut; "G," lead gasket.



The top bars were branded. There was diseased honey in the corners and many cells of pollen. They were treated according to these directions, aired ten days, and given to package bees, one to each package, on May 20, 1931.



They were photographed after several generations of brood had been reared in them again. No trace of disease by the end of the season

the container has a capacity of about fifty gallons of water, to half a pound an hour in case the container has a capacity of about one thousand gallons.

In the work at the University of Minnesota a barrel filled with combs (35) required three pounds of chlorine in two days, and a circular wooden tank six feet high by six feet in diameter, containing fifty supers filled with combs, required twenty-one pounds in three days. Although the twenty-one pounds of chlorine were sufficient to do the work in the latter case, it was possible to use as little as this because a testing apparatus was available by means of which the strength of the solution could be tested at intervals. In practical application a minimum of twenty-five to thirty pounds of chlorine for a tank holding fifty supers of combs is advised. Two days' treatment was sufficient for the combs in the smaller container, while three days' treatment was given in the larger tank.

The combs should be left from ten to twenty-four hours in the water after the gas is turned off and then the water drained out of the tank. No precautions are necessary in disposing of this water, as it is sterile. The treated equipment is taken out and allowed to dry. Washing the combs after treatment is not necessary.

When the chlorine odor has disappeared the equipment is ready for use. The wax will be partly bleached and brittle, but after the combs have been on the bees for awhile it will regain its normal color and consistency.

Additional Information and Precautions

The treating should be done in the open air and not in a closed room, as the escaping gas is disagreeable in a building. It should be done at a time when no bees are flying, or where no bees can gain access to infected material.

Since chlorine attacks metal, the treating tank should be of wood, stone, concrete, etc., if one is treating several lots of equipment. If it is to be used but once or twice, a metal tank may be used, since the corrosive effect is very slight. The effect on foundation wire and metal hive parts is so slight that it may be disregarded.

The solution, which is chlorine water, is not poisonous and has no effect on the hands, but breathing the gas brings on disagreeable results and should be avoided.

Chlorine is added to drinking water in many city filtration plants, where from three to ten parts of chlorine to one million of water are sometimes added. In swimming pools (Turn to page 33)

Let's Forget Our Differences and Bring Honey Into Its Own

By Natt Noyes Dodge
Washington

"POP" Warner, the famous football coach, is credited with the statement that "the best defense is a strong offense." In football, winning teams are those whose eleven members work together as one man; whose power lies in the strength of each individual hurled against the weakest point of the opposition at precisely the same time.

Approximately 800,000 persons are engaged in beekeeping in the United States—enough, if all together in one place, to populate a city the size of Boston or St. Louis. And yet this powerful army of honey producers is constantly wasting its energies fighting and bickering internally, squabbling over such issues as burning or treating diseased colonies, demanding certification of honey produced across a state line, or some similar matter of far less importance than the predominating question now facing beekeepers of the United States: Is honey production, as an industry, going to survive?

During the last five years continued discussion in the beekeeping publications and at beekeepers' gatherings has convinced the majority of thinking bee men that the fundamental weakness in our industry lies in an unfavorable ratio of supply and demand. Call it overproduction, or underconsumption, or any other name, **more honey is produced by American beekeepers than is consumed in the United States.** True, several half-hearted attempts have been made to remedy the difficulty. Efforts to rid the nation of its surplus honey through exportation have been balked by increased duties, demands for certificates of inspection, diastase tests, and the widespread depreciation in values and buying power. The work of the American Honey Institute is the only bright spot in the whole gloomy picture, and that can be considered as but a feeble effort because only a minority of the beekeepers in the country have really put their hearts behind the movement. Nevertheless, hampered by a pitiful lack of finances, slipshod cooperation and indifferent support from beekeepers, Dr. Barnard and Miss Fischer have accomplished more for the honey industry in the last three years than all the beekeepers in the United States have done in a decade. And then, after the loss of Dr. Barnard, Miss Fischer, with one assistant, carried through the most successful national campaign of honey publicity during National Honey Week that this nation has ever known. Two girls put across a national program for which many a business executive would be glad to take credit.

You may think this is an Institute number, but what is more important than the job of making one of our valued possessions work to its limits? The suggestions here given has much merit and it is the right time to consider it.

We know our problem. We know how it may be solved. Let us as a unit of beekeepers 800,000 strong for once in our lives forget our minor local differences and all begin to work together for just **one** thing: increased honey consumption in the United States. We have the machinery of organization; we have the brains, and we have the money. It is just a matter of getting them all together and working in one big, concentrated, concerted movement. Why, if each beekeeper in the country would contribute one measly dime, we would accumulate a total of \$80,000—enough to support a real, man-size publicity organization for several years.

The nation is undergoing a period of depression. Every industry is busy worrying over its troubles. It hasn't time or inclination to look around and see what the other fellow is doing. Now is the time for us to act and get the jump on the others. Now is the time to start the "big push," the strong offensive drive that "Pop" Warner, wise in the ways of battle, says is the best form of defense.

Nearly every state in the country has its state beekeepers' association. Many counties also have organizations of beekeepers. These groups meet once, twice, or several times each year. The members listen to a program, tell one another their troubles, pass a few well-phrased resolutions, and adjourn—with very little actually accomplished. A pleasant time is had by all. Is it any wonder that these organizations are losing members? It costs money to travel half way across a big state, stay at a hotel for two or three days, and receive practically no benefit therefrom. And yet, here again we have a very powerful potential force capable of accomplishing much through united effort. Have you ever stood on the bank of a great river, where with a smooth rush it swept over a precipice to fall in a great column of silent power, and crash and roar in sullen anger among the rocks and dripping ledges below? Wasted power, with only noise and

vapor as its by-products. And so with beekeepers—a torrent 800,000 strong, and no organization of its forces to guide them into a channel where they may turn the wheels of publicity generators to educate the public to the many virtues and uses of honey.

At its annual convention in Seattle in November, the Washington State Beekeepers' Association appointed from its membership a committee known as the American Honey Institute Committee. The purpose of this committee is to function twelve months of the year to assist the American Honey Institute in its work of intelligently spreading honey publicity throughout the state of Washington. Because the work of the American Honey Institute is national in its character, its activities must be directed largely toward and through country-wide publicity channels. The association's new committee plans to make its campaign through publicity channels whose scope is limited to the state of Washington. Already the work of one member of the association has attracted attention. Early in December the Seattle Post-Intelligencer carried a very nice honey story supplied by Mrs. J. O. Kane, wife of honey producer Kane of the Yakima Valley. The Washington State Beekeepers' Association has set an example which, if carefully and enthusiastically followed by all of the other state and county beekeepers' associations, has all of the possibilities of going a long way toward solving the big economic problem of the honey industry. Here's how:

1. The president of each beekeepers' organization in the United States appoint, after careful thought, a committee composed of five of the keenest, liveliest, most responsible beekeepers in his organization, this committee to be known as the American Honey Institute Committee of his organization.

2. The chairman of each of these many A. H. I. committees immediately communicate with Miss Malitta Fischer of the American Honey Institute, 225 Wimmer Building, In-

dianapolis, Indiana, and report his committee as standing by for instructions.

3. The chairman of each A. H. I. committee to be empowered to call upon any member of his association for assistance in carrying out his publicity program.

4. That each committee have the following duties:

a. To cooperate 100 per cent with the American Honey Institute.

b. To organize all of the beekeepers within the sphere of its activities and to solicit funds for the maintenance of the American Honey Institute.

c. To contact all of the agencies for the broadcasting of publicity within its territory and supply each agency with material of a type that the agency may use most effectively, such material to be furnished or authorized by the American Honey Institute.

d. To contact all of the organizations within the sphere of its activities, such as Chambers of Commerce, Kiwanis clubs, and other service and business groups, and impress upon the members the value of bees as pollination agents and the importance of beekeeping as a local industry, thereby obtaining their support and assistance in increasing the use of honey produced in the localities in which these organizations are active.

The American Honey Institute has been struggling along these several years, attempting to blanket the whole nation with information about honey. This is a tremendous task, and it is high time that beekeepers, who are the ones to receive the benefits from the work that the American Honey Institute is doing, should display an active interest in what is being accomplished in their behalf. It is unjust to say that all beekeepers are not appreciative of the work of the American Honey Institute. Many have contributed heavily both of time and money for its support. But there are thousands of others who will continue to sit back and do nothing until some **organized** effort is made to increase the effectiveness of the Institute's labors.

Now is the time! You presidents of state and county beekeepers' organizations, start the ball rolling. Choose men and women from whom you **know** you will get prompt and continuous action. Let's get this thing started and smoothly under way before summer. Let's put the American Honey Institute in a position so that by next fall it can direct the efforts of a hundred willing committees located in every part of the country where there are people to eat honey. Let's have a National Honey Week in 1932 that will bring the message of **health through honey** to everyone.



Presentation of the Bee Kingdom Medal

By H. F. Wilson

THE Bee Kingdom League, with headquarters at Cairo, Egypt, recently issued a medal to C. P. Dadant, editor of the *American Bee Journal*, in honor of his eightieth birthday. Dr. Abushady, the founder of the organization, expressed the wish that the presentation be placed in the hands of Prof. H. F. Wilson, custodian of the Miller Memorial Library at Madison, Wis. Prof. Wilson planned the presentation as a feature of the banquet of the Wisconsin Beekeepers' Association on December 3. Since Mr. Dadant was unable to be present in person to receive the medal, his son, Maurice, acted in his stead. Prof. Wilson tells our readers something about the occasion.

IT would seem impossible for any person to attend a banquet such as was held at the New Pfister Hotel during the Wisconsin State Beekeepers' Association convention in Milwaukee, on Thursday evening, December 3, and not try to erect a mind picture of the persons and places discussed. Three of our largest continents were brought together in the simple presentation of a gold medal to one of our beekeepers whose fame has spread throughout the world. We could only regret that representatives of the Bee Kingdom League of Egypt and Mr. C. P. Dadant were not able to be present to participate in this little ceremony, the beginning of which can be traced back to 1817, with the birth of Mr. Charles Dadant. Mr. Kent Pellett, son of F. C. Pellett, one of the associate editors of the *American Bee Journal*, has a very interesting story of the life and works of the Dadant family, and one can hardly read this story without gaining a full appreciation of the stamina and fortitude with which Charles Dadant and his son started with two colonies of bees. It is a pleasure indeed to visit the present plant and apiaries and to know what has been accomplished by these hardy pioneers.

The teachings of Mr. C. P. Dadant have been accepted and approved throughout many sections of the world, as shown by the many translations of his works into half a dozen languages, and it is indeed gratifying to the friends of Mr. Dadant to know that beekeepers in far-off Egypt wished to extend to him a symbol of their appreciation of a truly great man in the development of the beekeeping industry. Only those who were present at the ban-

quet could fully appreciate the spirit of love and high regard that was present. I am not sure but what Mr. C. P. Dadant's absence made it possible for each speaker to express himself in a way that he might not have done had Mr. Dadant been present because of a suspicion of attempted flattery. It was easy to know that every speaker was speaking from deep down in his heart during the many kind expressions that were given. It was very apparent that all of those present held a very tender and high regard for their good friend, Mr. C. P. Dadant, and I believe that the sentiment of those at the banquet can be fairly expressed in the following letter, sent to Mr. Dadant at the request of those in attendance:

"My dear Mr. Dadant:

At the annual banquet of the Wisconsin State Beekeepers' Association, after the Egyptian medal presented to you had been handed over by Prof. Wilson to your son, Maurice, the members spent a 'Dadant Half Hour.'

Your beekeeper is as a rule a poor orator, but rich in gratitude and sentiment, and they rose to the occasion. At the conclusion they honored me by asking that I write you, expressing by written word what they wished you could have heard.

Wisconsin beekeepers well know that you are the 'last of a great race,' that you are the only remaining link with the past great decades of great beekeeping and great bee men. These surely were 'giants in the land in those days.'

They wish to express their deep gratitude for all your noble contributions to bee literature, and for all your dignified conduct of the printed

(Turn to page 32)

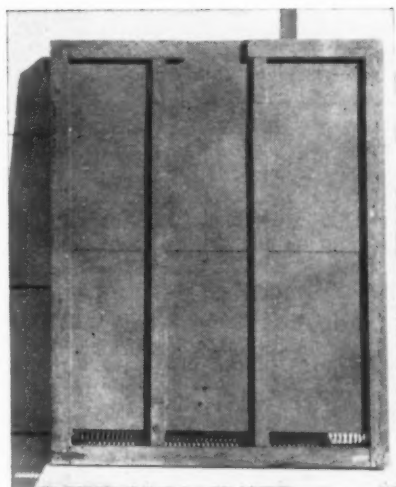


The Rauchfuss mating yard where these nuclei are used

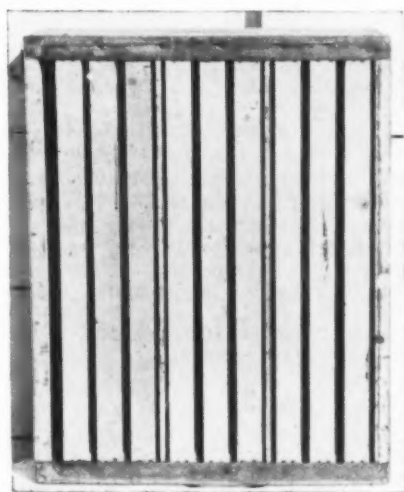
Queen-Rearing for the Commercial Beekeeper

Part 4 of the Rauchfuss Queen-Rearing System

By C. L. Corkins
University of Wyoming



Rauchfuss nuclei bottom board.



Top of the mating nucleus

ONE of the weak points in commercial beekeeping today is the neglect of selective breeding. Of all the commercial beekeepers in this region whom I know personally and with whose systems I am familiar, those who are giving attention to bettering their bees can be counted on the fingers of one hand.

It is apparent that this situation is more or less common in all the beekeeping area of the North. Perhaps in the South more attention is being given to breeding.

The bee journals recently have been full of discussions about the superiority of certain races of bees. However, little has been said about the improvements of either of the two leading races under discussion. And that's a really vital point.

After several years of experience and research in wintering bees under severe conditions, I recently listed, in a talk before beekeepers, the essentials of good wintering practices in the intermountain region. At the head of the list was placed "Selective Breeding of Bees for Northern Conditions." The points in wintering bees which have been so often stressed, even overworked, are of less importance than this one thing. I asked the beekeepers to challenge the point, but none did. Mr. Rauchfuss was asked if he agreed. He did.

The cornerstone of success of the Rauchfuss system is selective breeding. For some forty years there has been a constant selection and a systematic requeening in the Rauchfuss apiaries. It is little wonder that the Rauchfuss bees do better and winter

(Turn to page 37)



Bottom of the mating nucleus



Mating nuclei, stacked over a small colony

Honey Part of Standard Diet at This Nature Sanitarium

By Malitta D. Fischer
American Honey Institute

EVERY week is Honey Week at the Riese Naturopathic Sanitarium, La Crosse, Wisconsin, for honey is always on the table and in the diet kitchen. This sanitarium believes in natural healing and in its program of diet therapy finds honey very helpful. Beekeepers will be interested in the story.

About forty-six years ago Joseph Riese, founder of the Riese Naturopathic Sanitarium, was in the cigar business, owning a large cigar and tobacco factory. Although a young man, he could not do his work because of poor health. His difficulty was diagnosed as dropsy, which fast became more serious until most of his friends and members of his family regarded his case as hopeless.

During his illness he recalled some of the sanitariums in Germany, where he had been born and lived until a young man. These sanitariums used the old natural healing methods. He wrote several of them, explaining his difficulty, and was advised by mail of a program. The fees he had to pay for the advice were heavy, but he kept on treating himself according to their directions and noticed an improvement. His friends in La Crosse became interested in his recovery and many of them sent other persons having the same trouble to him for treatment. At first he told just persons with dropsy of the treatment he had followed. But as persons with other illness kept coming to him, too, he decided to go to Europe and study this method of helping others regain their health. When he came back he rented a small cottage for his office and treatment rooms, discontinuing his tobacco business.

In a short time his patients grew in number so his building was too small. His next sanitarium was a brick building at the corner of Seventh and Cameron Avenue, La Crosse, Wisconsin, the lower floor used for residential purposes and the second floor for treatment rooms. Again the number of patients outgrew the space. He decided to buy the building and remodel it. The entire building was soon outgrown and he bought adjoining land to erect a building, which is still a part of the sanitarium.

He was about 35 years old when he first attempted to treat himself for dropsy. He operated the sanitarium for thirty-five years, during which period he had several recurring attacks of his dropsical trouble, but each time was able to treat himself and recover, although his medical friends who would visit him during these periods were definite in their feeling that he could not recover. His



Mrs. T. Louise Nedvidek, of the Riese Sanitarium

employees will tell you that his daily working hours were long—sixteen to eighteen hours—always spent treating others.

At the age of 72 he took an extended trip to the East to visit other sanitariums following this method of treatment. Before leaving, he assigned the management of the sanitarium to his daughter, Mrs. T. Louise Nedvidek, who had been working with him a number of years. Dr. Riese continued his trip in spite of the fact that he was aware of the return of



Joseph Riese, the founder

his old trouble. When he came back to La Crosse his family tried to get him to rest, but he felt that the sanitarium needed him, and so continued to work in spite of the fact that he was under treatment.

Since his death in 1922, Mrs. Nedvidek has been in active charge and she reports a splendid increase in business. She has continued her studies under many of the prominent physicians interested in this type of cure, spending considerable time with Dr. Benedict Lust of New York, Dr. Collins of New Jersey, Dr. Henry Lindlahr of Chicago, and with Dr. Yergin of Chicago.

Mrs. Nedvidek is much interested in the natural sugars, particularly honey. At a summer meeting of Wisconsin beekeepers two years ago held at La Crosse, she gave an enthusiastic report of the value of honey in diet therapy work. Many of their patients had never previously used honey and after leaving the sanitarium would send back orders for more honey. The sanitarium maintains a health food store, which not only sells health foods to its patients, after leaving, but to local residents and any others interested in securing the products.

Under honey, the following are found in the sanitarium store: Orange blossom honey, desert honey (from California) and clover blossom honey.

Beekeepers will remember that Dr. Henry Lindlahr, of the Lindlahr Sanitarium, Chicago, says in his cook book:

"Always the natural sugars should be used. Honey is the very best of all and should be given preference when available. Maple and pure cane syrup come next in order; then the brown, unrefined cane or beet sugar. The highly refined, inorganic sugars—granulated, pulverized and loaf—should not be used."

Beekeepers who have just been through National Honey Week should be happy to know that at some sanitariums every week is Honey Week, for honey is always included in the food service. The latest report from Mrs. Nedvidek indicates that the sanitarium at La Crosse will be enlarged, not by an addition to the present building, but by a fine, new, modern structure.

What Price Color?

By G. L. Wilkinson
Alabama

With the advancement of the Caucasian bee, the same old question of color has arisen. What should the color of the queens and worker bees of the best strains of the Caucasian

bee be? The color of the offspring of imported stock from Russia has proven not to be very uniform. Caucasian bees from different sections of the Caucasus region are of widely different color and marking.

But I should like to ask this question of whoever may read this article: What difference does it make what color a bee is if it gives the satisfaction that you have a right to expect from your bees? It is my humble opinion that a bee should be raised for quality instead of color. What are the requirements of a good strain of Caucasian bees? It is my opinion that they should build up fast in the spring, gather more honey than other bees under the same conditions, be very gentle, winter well and use very little propolis.

The only way to tell when a Caucasian queen is purely mated

different parts of the Caucasus. Unlike Italy, the Caucasus is divided by ranges of mountains, so that the bees of one part are entirely unlike those of another part, not only in color, but in disposition and in other qualities. Mr. T. W. Cowan was authority for the fact that the bees of Lencoran, in the southernmost part of the Caucasus,



Two views of the Riese Sanitarium and a group of patients, upper right



are very yellow in color and very cross. On the other hand, the bees of Italy all have the three rings on the abdomen. All that our beekeepers have succeeded in doing was to improve the color and width of their rings. But if a bee does not have the three yellow rings, it is not pure Italian, while a bee from the Caucasus may be of any shade whatever.—Editor.)

is the way her bees act under manipulation. If you can go to a colony of Caucasian bees under ordinary conditions, open the hive without using smoke and without being stung, and the bees remain very quiet on the combs, you may be very sure that the queen is purely mated and that you have one from the best Caucasian stock procurable.

We know, as far as color goes, that the Italian bee originally imported into this country was very different in appearance from the Italian that we are familiar with today. Then why expect the Caucasian bee to be a super bee? We must give them a chance to prove what they are without prejudice as to color.

If your bees have the qualifications mentioned above, then what advantage would it be to have a very dark colored bee or a very light colored bee? It would not change the value of the bees one bit.

The Caucasians are good bees and have a great number of traits that are very advantageous to our American climate and conditions. Just use good common judgment in regard to them and you will find them to be a pleasure to work with.

(Our correspondent ignores the fact that Caucasian bees differ, not only in color, but also in qualities, in

There Really Are Scout Bees

By Bruce L. Morehouse
Minnesota

Some beekeepers regard with skepticism the idea that a swarm of bees will send out scouts to find a new home. The issuance of a swarm, with its spontaneity and apparent lack of direction, leads the casual observer to form the opinion that the swarm just happens to land where it does, provided it is not directed into a hive by the hand of man.

However, there is evidence to show that at some time during the swarming process, either before the issuance from the parent colony or when clustered afterwards, scout bees do actually seek out a new location for the future abode of the colony. An instance occurred one day when we were unloading a stack of supers from the truck just as a small swarm came our way. The bees seemed to smell the supers and settled on a tree about two hundred feet away. The cluster was so small we decided not even to try to hive it. Presently we noticed bees trying to get in at the bottom of the pile of supers. There

was a good honeyflow on, so we knew they were not ordinary robber bees. We dug away the earth a bit below the supers and went on about our work. Soon, however, the clustered swarm broke and came almost directly to the pile of supers, as though in answer to our surmise that those were scout bees investigating the possibilities for a future home.

Very probably a swarm may issue and during the process of its flight to some clustering place, or to some location already sought out by the scout bees, the queen or a considerable portion of the bees may spy a hollow tree, or some other place, suitable or unsuitable, and impulsively decide, like some people, there to make the future home. But the normal procedure seems to be to send out scout bees either before the issuance of the swarm or after the swarm cluster has formed, from which we may conclude that there is a self-direction in the affairs of the issuing swarm however altered by external circumstances as the process goes on.

Morris, Minn.

(The editor can confirm this observation from his own recollections, when, a swarm of bees having issued, we noticed a lot of worker bees cleaning out a hole in a large oak tree near our home. This work continued as long as the swarm was hanging on the limb. But as we harvested it and hived it, the bees at the oak tree abandoned their work and we never saw bees there again. We are quite sure, however, that the queen has nothing to do with the selection of a home for the swarm. See paragraph 415 of "The Hive and Honey Bee.")

Death of Joseph Ruddy

We have recently been advised of the death of Joseph Ruddy, president of Ruddy Manufacturing Company of Brantford, Ontario, on November 13. No details are available here.

The Ruddy Manufacturing Company are large producers of bee supplies in Canada and are well known throughout that country. Mr. Ruddy was also interested in several other business enterprises.

Is the Cause of Swarming Known Generally?

By Jes Dalton
Louisiana

ON page 419 of the September number, George S. Demuth, editor of *Gleanings in Bee Culture*, makes the statement that the cause of swarming is well known and ridicules the theory of "too much larval food," known as the Gerstung theory.

I agree with him on the latter assertion, but I question the statement as being too sweeping. I believe weather or climatic conditions which influence honeyflows have a bearing on swarming that few of us realize. I want to give a couple of instances.

In 1924 or 1925 I kept bees in central Louisiana. I began to requeen and set out young queens in July, continuing through August and September. We had a somewhat dry, sunny fall and honey came in freely, but I hated to take it off or put in foundation for fear the flow would stop.

I watched these colonies headed by young queens, many of them setting in the sun in eight-frame, single-story hives, nearly every bee hanging out. I opened them and it was common to find them so honey-bound that brood covered a space in one frame as large as your hand, and on the two adjoining combs not quite as large. I ran about three hundred colonies there and do not recall a single one of them that swarmed that fall.

Next spring was peculiar. These colonies built up and the weather turned warm and rainy. The bees would gather heavy for a day and a half and that afternoon it would rain until the following morning; about 10 or 11 o'clock it would clear up and be sunny and warm again.

There would be a grand rush out of the hives, a great humming of drones. And talk about swarming! It was common to see three swarms at one time. Those young queens, reared the fall before and supposedly immune to swarming, would come out. Mating boxes would swarm empty.

Now, the fall before they were certainly almost all crowded, and yet none swarmed. The next spring very few were crowded and many swarmed.

This spring, at Kenner, I have two hundred colonies and we have had the best flow I have ever seen in Louisiana. A colony on scales weighing 84 pounds on the fifteenth of March today balances 372 pounds. Most of the time since early spring my bees have been crowded.

With about the same conditions as I have just described for central Louisiana, in the fall of the year under observation, I have hated to put in foundation for fear of having

to carry it over, and the bees have been crowded.

Doing every bit of my work myself, rearing queens, making increase, nailing up equipment, putting in foundation and selling honey, often my yard has been crowded, but in the whole year I have only seen two colonies swarm, and neither of these colonies was crowded.

I think I had failing queens, from the general appearance of the hives. In working the yard, I have found less than half a dozen colonies showing any indication of swarming. I have colonies putting up comb honey in shallow frames. Some of them have eight frames in shallow supers full of comb honey almost entirely sealed over and carried up through an excluder.

Several years ago a friend extolled the values of Carniolan bees until I tried them. He assured me they were no worse to swarm and were faster than any other race—that one had to keep ahead of them.

I tried them and my breeding queen and half her increase swarmed out, some of them with over half the combs empty. If I am not badly mistaken, this spring the Field Station at Baton Rouge lost its Caucasian breeder the same way.

So I cannot agree with Mr. Demuth in either conclusion—that the cause of swarming is generally known or that a crowded brood nest is responsible. I would sooner believe it rests with weather or climatic conditions governing flows and the breeding conditions. Possibly breeding from swarming or non-swarming strains may have an influence.

The fall my bees refused to swarm I had been breeding from what I thought was a non-swarming strain, but the next spring there was no effect whatever. The same queens, in the same hives, in the same yards, and when the weather conditions and the flows were entirely different, they swarmed.

* This present season, crowded brood chambers have not caused a single colony to swarm out of two hundred.

New Bulletin on Honey Plants

The literature of the honey plants is growing. The latest addition is "Nectar and Pollen Plants of California," by G. H. Vansell, published by the College of Agriculture, Berkeley, California.

The bulletin contains about sixty pages and is well illustrated. Vansell is to be congratulated on the way in which he has presented his material. It is not technical and yet is accurate. Each plant is treated briefly, but the information the beekeeper needs is

included. The pictures are clear and enable the novice to recognize the plant. The paper and printing and the arrangement of material are all good.

Vansell has spent several years in a study of the honey sources of California, and much of the material has been gathered by first-hand observation in the field. It is a valuable addition to the literature relating to the honey plants. F. C. P.

Try This and See for Yourself

Last fall I had a flock of some seventy-odd very fine White Rock pullets that contracted colds and didn't yield very readily to treatment. It suddenly dawned upon me that honey might be of aid to them; it was good for colds in man, why not poultry?

So I began to experiment. I dissolved honey in warm water and mixed a wet mash from this solution, just enough so they would readily clean it up. At first I used just a little honey, but wound up with about a pound of honey to three quarts of water and then mixed all the mash it would take without being sloppy.

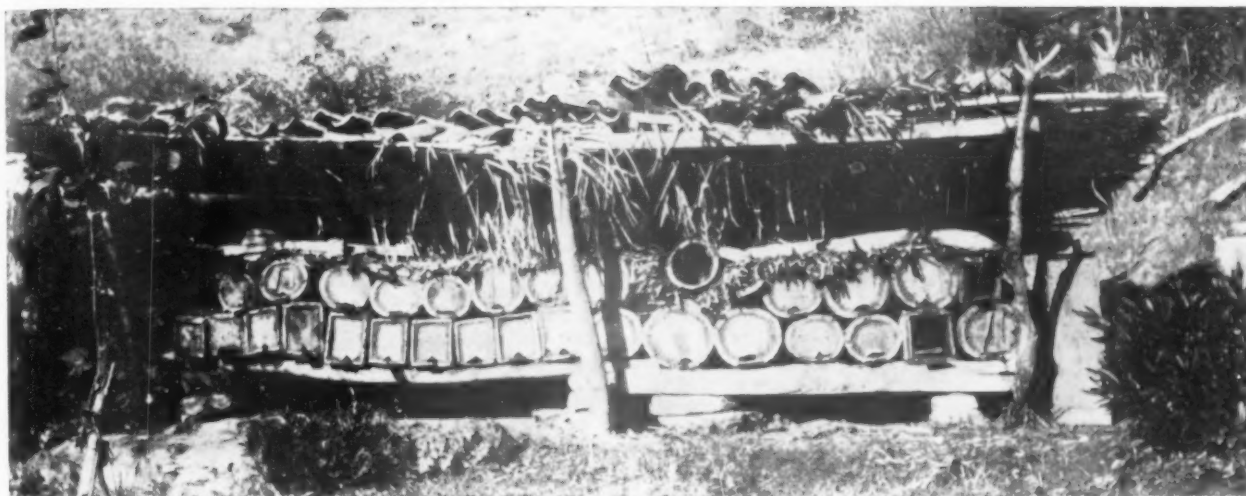
Well, you should have seen those pullets snap out of it. In less than two weeks their colds were gone, they were nicely developed and the finest bunch of birds you ever saw. Since then honey has been one of my poultry remedies. It's more than a remedy—it's a remedy and a food combined; and it is a regular ration in the conditioning coop and show room.

Lee Stewart, Indiana.

Our Lesson in Practical Cooperation

When life is full of trouble and hardship the human mind drifts naturally into a philosophical trend. We are either made stronger or broken by hard conditions. One sure method of making the most of the desire to look beneath the surface of things, and so satisfy the philosophical tendency of our minds, is to study again the community life of our little friends, the honeybees. Perfect cooperation is the outstanding feature of the community life of the honeybee. Strange, when we stop to think of it, but hundreds of years' intimate association with bees has not taught the value of practical cooperation. The principal difference between bees and men, as far as cooperation is concerned, is that men believe in the theory of cooperation and do not practice it, while the bees know nothing about the theory of cooperation, but practice it perfectly. When man has finally learned the lesson of practical cooperation, as he probably will in time, his best model will be found inside the beehive.

R. B. McCain, California.



A part of Abdullah Effendi's apiary

A Beekeeping Adventure in Turkey

By H. B. Disbrowe
Ontario

DURING the years 1924-7 I was in charge of agricultural instruction at an American institution, "The International College," at Smyrna, Turkey. During those three years I was able to study beekeeping as carried out in that interesting country, and obtained a great deal of pleasure, if little profit, from so doing.

It was on a mountain trip in the vicinity of Smyrna that I first came in contact with a Turkish bee man. Our party was descending the pine-clad slopes of the Lamandagh, one of the highest peaks in the Smyrna range. Emerging from a thicket of scrub pine, we found ourselves on a small plateau, on one side of which a gurgling spring poured into a roughly constructed stone basin. In our parched state this was a welcome sight indeed, and quickly divesting ourselves of heavy packs we gathered around the basin, where we laved our arms and with cupped hands conveyed the cool water to our lips. Refreshed, we lolled on the warm stones to talk and rest awhile before proceeding on our way. Almost immediately my attention was taken by the sight of hundreds of honeybees gathering water from the spring. As a practical beekeeper my interest was aroused, for I knew that there must be a fair-sized apiary in the vicinity and I resolved to have a look at it. With a word to my companions to await my return, I plunged into the thicket in the direction from which the bees were coming.

After a short walk of perhaps ten minutes' duration I was halted by two savage-looking dogs that came barking furiously at me through the underbrush. Being wise in the ways of the countryside I did not risk anni-



Abdullah Effendi, the Turkish beekeeper

hilation by approaching closer, but stood shouting for their master, whom I knew must be nearby. In response to my shouts a kindly looking old Turk made his appearance. He quieted the growling dogs and courteously invited me to follow him to his hut. I explained to him my interest in bees, which seemed to please him very much. His habitation proved to be a small, one-roomed hut with mud walls and sod roof. On

our approach a lady of generous proportions, busily engaged in grinding meal, hastily veiled herself and scuttled through the doorway, but two grinning, grimy youngsters of undetermined sex stood their ground and stared at me in childish wonder.

A short distance from the hut was the apiary, which at first glance I took to be a pile of logs. The individual hives somewhat resembled the log hives of this country, with the exception, however, that they were of wicker-work construction, plastered over with cow dung. The ends were closed with roughly cut boards sealed in with the same material. The hives were all piled together in the manner of cordwood. I evinced a curiosity to see and taste his product, so with obliging readiness the old fellow tore the end from the nearest hive and, in spite of the fact that his rough handling had aroused the bees, plunged in his arm and removed a fine comb of honey that was entirely free of brood. I suggested that the use of smoke would facilitate the handling of his bees, but he replied that he only used smoke when they were "choke fena" (very bad). He displayed the open pan in which he burned dry cow dung, explaining that the fumes from this material gave him complete mastery of the bees.

I enquired of Abdullah Effendi (for this, he informed me, was his name) from what source the bees were obtaining the nectar which was coming in freely. He stated that they were getting it from the pine trees, and went on to explain that, due to a "hastalik" (sickness), they always exuded nectar at this time of the year. I examined the trees and found them to be liberally spattered

with a sticky, sweet fluid that hung in small globules on the needles. Whether these globules were actually exuded from the needles or were the excretions of plant lice or scale insects I was never able to ascertain. The honey, however, did not possess the tart taste commonly associated with honeydew.

By this time nearly half an hour had passed, and, thinking that my companions might be becoming anxious as to my whereabouts, I prepared to take my leave of friend Abdullah. He, however, insisted that I drink the customary cup of coffee with him before parting, and, knowing that it would be considered impolite to refuse, I acceded to his request. I was given the seat of honor, a rickety straw-bottomed chair, while Abdullah Effendi seated himself on the door ledge. His wife, recovered from her timidity, but carefully veiled, served us in turn with tiny cups of delicious Turkish coffee. Dawdling over our cups in the Turkish manner, we continued to talk bees. He told me how as a boy he had obtained his first swarm from a beekeeper in his native village, in exchange for a young kid which he had found wandering unclaimed on the mountain-side. From this original swarm he had built up his apiary to its present number of nearly two hundred colonies. His profits were small, but, as he explained, sufficient to purchase bread for himself and family. What more could one ask of Allah? The "bal" (honey) which he obtained was sold in the bazaars of Smyrna. He showed me how the combs of honey were cut and packed in tin cans about the size of our five-pound pails. A few dead bees were always crushed in with the honey just to prove that the article was genuine; similarly an occasional spot of brood helped to raise the weight and accomplish the same purpose. The covers were soldered on the cans to keep out ants and to protect the contents from dust and dirt. His bees worked chiefly on the pines, but also secured nectar from the blossoms of the wild almond and various small flowers that appear on the mountain-side in the early spring. In the cultivated valleys, where he sometimes moved his bees, they worked on the blossoms of the orange, almond, locust trees, and various other cultivated fruits and plants.

During this time I had been so engrossed in the mysteries of Turkish beekeeping that all thoughts of my waiting companions had nearly left me. At this point, however, a concerted shout from the direction of the spring warned me that it was time to leave. I had determined, however, that I must have some bees of my own, and, as Abdullah Effendi was willing to do business, I hastily concluded a bargain with him for five

colonies, to be delivered at the college the following week. Business concluded, salaams were exchanged and I rejoined my somewhat impatient companions at the spring. We shouldered packs and proceeded on our homeward journey.

One evening the following week I was enjoying a quiet smoke outside my quarters when friend Abdullah appeared. He was leading a diminutive donkey on whose back was loaded my five colonies of bees. The hives were swathed in burlap; as it was a warm evening they were humming away in fine style in an effort to keep the air circulating. We quickly unloaded them on the stand which I had prepared. I paid the purchase price of two dollars per colony and Abdullah went on his way rejoicing over this unexpected bonanza.

I immediately ordered hives, a smoker, comb foundation, etc., from America. In due course these arrived. I transferred my colonies to the modern equipment and awaited results. These, however, were disappointing and after a year or two I was forced to conclude that beekeeping, in that part of Turkey at least, was not a profitable undertaking. The honey procured was of fair quality, but the amount was small and apiary pests were many.

The bees themselves resemble the Italians, except that they are duller in color and the bands are not so distinct. I found them easy enough to handle during a honeyflow, but when nectar was scarce they were viciousness itself. They are infected by a species of louse (*braula*) and nearly every bee in a colony bears one or more of these parasites on its thorax. Another pest that I learned to cordially dislike was a species of giant wasp which carried the bees off bodily from the hive. These increased to great numbers as the season progressed and weakened colonies were often completely decimated.

On the whole, I obtained a great deal of pleasure, if little profit, from my Turkish beekeeping activities. At any rate I provided a lot of free entertainment in a land where it is scarce, for the peasantry never ceased to wonder and admire the way in which I was able to handle bees through the use of the smoker and movable frames.

Production and Consumption of Honey in Norway

Honey cake is a traditional food in Norway and is still sold as a specialty particularly for the month of February. It is not definitely known when the custom originated, but honey cakes have long been associated with the annual market day, especially the horse markets, which were always held in specific towns.

Possibly honey cakes served as a form of sweet and a rare treat in the days when other sweets were not known. Honey cakes are now featured by the bakers in February, but are also sold throughout the year.

France supplies by far the largest proportion of foreign honey, followed by Argentina, Guatemala and New Zealand. The sources vary somewhat from season to season, depending upon current prices. Export of honey is negligible.

Efforts to encourage greater local production of honey are meeting slowly with success. Accurate statistics on production have not been obtained, but in the agricultural census of June, 1929, the count showed 23,150 beehives in Norway.

Light colored honey is preferred by the Norwegians, and the demand for other honey is of little importance. Extracted honey is the chief form in which this food article is sold. During the period after the war, the United States supplied a considerable part of the honey imported, but this has now decreased to a small amount. Most of the imported honey goes to the bakery trade. — Department of Commerce, "Foostuffs."

Bakers Delighted With Honey Offerings in Their Favorite Trade Paper

In conversation with bakers during Honey Week, we were agreeably surprised to note the favor with which they are receiving the honey recipes and honey articles in their favorite trade paper, "The Bakers' Helper," published in Chicago. This is to the baker what the bee magazines are to beekeepers. Bakers who have never before thought of using honey are now turning to it as a medium for producing new baked goods with an appeal to their customers. Bakers need and want honey. It only takes a little effort on the part of the beekeeper to establish an outlet in this direction.

Those who are interested in securing a position before the bakers can well take advantage of the classified or advertising columns of "The Bakers' Helper."

We note particularly two items in the recent number, October 24, 1931. 1. "Honey Cakes Hold High Favor," written by Paul Richards, features the use of honey in baking at Thanksgiving time. He describes honey doughs, how to make them, and gives particular honey recipes, one for a stock dough for honey cakes. The article is well illustrated with one particularly striking picture of honey dough figures—horses, Santa Claus, dolls—all dressed with icing.

In the same number is an article by Miss Fischer, of the American

Honey Institute, on National Honey Week, "A Good Time to Introduce Honey Items." Her article is also illustrated and gives pictures of honey macaroons and honey upside-down apple cake. She also mentions other recipes of interest to the baker.

This is a big field for the beekeeper and one which should be cultivated at every opportunity.

Bees Not Necessarily Effectuated By Cell Size

By Milton G. Miller
California

IN the November number, on page 498, under the heading "Larger Sized Bees," there appears an editorial in which the idea is given of making larger cells to produce larger bees. There seems to me to be no good reason to believe that larger bees will be better bees. The honeybee is a very highly developed form of life, and unless some new condition arises that will make a larger bee more efficient, its size is right just as it is.

Now we happen to know that larger cells do not necessarily produce larger bees. In 1928 I had a colony of Italian bees in the orange groves near Anaheim that produced almost a full Hoffman frame of worker brood in normal drone-comb. The frame was one of several that had been placed in the super with starters only, for chunk honey, but this freakish queen filled the frame, all but a very narrow margin at the top, with worker brood.

While examining the hive, I noticed the peculiar appearance of this apparently drone brood with flat capped cells. Only a few cells, perhaps a dozen on each side, had normal rounded drone brood caps. The flat capped cells were found to contain worker brood. Later apparently perfectly normal bees emerged from this comb, built entirely of cells about one-fourth inch in diameter, and by close comparison the bees did not appear to differ in any way from those emerging from regular brood combs. The queen seemed to be perfectly normal. The hive was one of the best honey producers in the yard of one hundred colonies.

At the San Diego meeting of the State Beekeepers' Association, Prof. George H. Vansell, of Davis, made the statement that, contrary to the general belief, he did not think sex is governed automatically by the queen laying eggs in different sized cells. The circumstance I have reported seems to indicate that he is right.

(We give this statement on the value of larger cells without offering a decision either way. Let the matter be tested further by experiments. Sooner or later we will get to a definite, positive opinion, one way or the other.—Editor.)



from the Little Blue Kitchen

"Happy New Year"

"A Happy New Year!"—
Old wish ever new—
I'm passing along.
Dear readers, to you!

May each morn and noon
And each eventide
Bring joys of the sort
That ever abide!

Lida Keck-Wiggins.

George Elliston's "Bee"

Did you ever note when one is deeply interested in a subject the facts pertaining to it seem to bob up at every corner? Ever since Honey Lady opened the Blue Kitchen with the purpose of making it a laboratory for new recipes for honey, things about bees and honey have been crying out to her wherever she has gone. Recently Honey Lady was one of a party to drive down through the heart of Ohio for a week-end with a hard working newspaper writer and poet, "George Elliston."

This retreat is a tiny old farm house, refurnished, and most artistically decorated, although most of the decorations are as old as the house, and that is past the century mark.

There are wonderful quilts for the beds, braided rugs for the painted floors, a big fireplace where the flames release the most wonderful colors from wood that was a part of the big beech and other trees on the hills about. There was much antique and some new art china, and outside there was an orchard where red and yellow fruit hung luxurantly, a field where a flock of sheep grazed, two ponies in the stable lot, a well with the old oaken bucket.

George Elliston, whose poems are well known to radio listeners, sat in our midst and told us the story of the little old house as we had our midday meal before the blazing log. She read her own poems and said many interesting things, but it was when a comb of honey was passed around that Honey Lady pricked up her ears and asked a question:

"Are you fond of honey, Miss Elliston?"

"Fond of it?" she said. "Why we can't live without it. We have it at every meal out here; also in town. . ."



"I'm glad to hear it," said Honey Lady, producing a notebook, hoping for a new idea to try out in Blue Kitchen.

"Well, to tell you the honest truth," said the poet, "we are in need of so much honey here at Catalpa Cottage that we are going to get a bee." This, being interpreted, means that there is to be an apiary in one of those magic fields that hold so much poetry. George Elliston, when asked about her recipes, advised Honey Lady that she, being a poet and a busy one, had never learned to cook, but on her pantry shelves will be found honey always in the comb like Nature meant it to be.

"And you know honey and bees have afforded inspiration for many of the world's greatest poets. . . ." Then she began quoting the most exquisite things about bees, first from Shakespeare, then from other writers, and finally she said that there is folklore, legend and superstition galore about the bees. "Why, right in a house I knew down in Kentucky, whenever a person died, they covered all the mirrors with sheets and then went out and 'told the bees.'"

"Thus simple folk of long ago knew the wisdom of the bee; knew how human it is, and thought it nothing queer to go out and 'tell the bees' when sorrow or joy came into their lives!"

When we left Catalpa Cottage, full of a feeling of sweet sympathy with Nature, out through a region veiled in purple mists and lighted by the rays of a setting sun, Honey Lady was very glad that hers is the privilege of emulating that wonderful little maker of honey sweets, the bee.

And Now for Some Brand New Recipes

Recently Honey Lady was hostess to a group of friends in her dining room, which opens right off the little Blue Kitchen. A fine young turkey hen had been presented to Honey Lady, and she shared this joy with a few others. The dinner was said

(Turn to page 27)

A Bee With One Compound Eye

By Erwin C. Alfonsus, Formerly of University of Minnesota



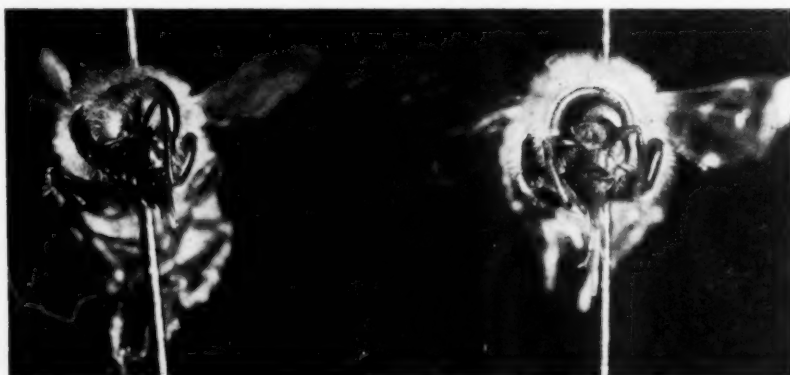
The above illustrations show, in front and side view, a normal bee (left) and a bee with only one compound eye (right). This one-eyed specimen was discovered, on August 4, 1930, on the inner cover of a colony which was used in an experiment on labor division at the Zumbra Heights Experiment Station of the University of Minnesota. Evidently a newly emerged specimen, it attracted attention by its unusual manner of locomotion. Instead of walking forwards, it moved backwards like a crayfish.

In the laboratory it was fed with honey, which it ate in a normal manner. Even a droplet of honey presented on a toothpick could not make the bee move forward; it continued its backward marching.

An examination under the binocu-

lar microscope showed a bee in which the abdomen with its sting and the thorax with its appendages were normally developed, while the head was very peculiarly arranged.

There was only one compound eye present. This was situated in the middle of the forehead, absolutely symmetrically. The simple eyes were absent. The antennae were shorter and thicker than on a normal bee. The face was narrower and slightly longer, but the mandibles and the tongue were of the same size and shape as in a normal bee. The cyclopic eye of the abnormal bee is of the same size as the compound eye of its normal sister, but instead of being kidney-shaped it is crescent-shaped, with two pointed ends. A more detailed description of the one-eyed specimen will appear elsewhere.



A Tragic Experience With Spray Poison

By Rambler II

For five long years I have been a poor dirt farmer. Once I was a great beekeeper. How I fell from that estate is a story. I had exactly 1111 strong colonies of fine Italian bees completely equipped. One man, besides myself, and three grown boys and three girls were working for me in a three-story, frame-construction factory and honey house, with over

\$15,000 invested in addition to the real estate.

Honey was easy to sell and the wholesale price was good.

Came the last week in May and I was sitting pretty; the bees building up rapidly, new queens in every colony, hives filled with brood, pollen and honey to gladden the heart, and from all indications a great crop of honey was to be expected.

The weather was just right, the air perfectly clear; the distant hills, sharp as a cross-cut saw, outlined in

purple and lavender and soft warm colors. The air was like a sweet perfume with the first alfalfa bloom. The nights were cool enough to bring on a nectar flow.

Then one bright day I went with my family to one of the outapiaries for a little picnic. After lunch we put on our veils, lit the smoker, and opened what had been one of the strongest colonies a few days before, with twelve frames of brood in two stories that I expected to use for comb honey. I wanted to show these folks that the realization of our dreams was at hand. I wanted to vindicate my judgment in selecting beekeeping as a means of earning a living.

So imagine my feelings when I saw the hive almost empty of bees, except a few newly emerged ones crawling forsakenly about the combs. Hive after hive revealed the same condition. The ground in every direction was covered with dying bees just able to crawl around and hang in clusters here and there in the grass. I should say before the disaster there had been an average of ten pounds of bees in each hive and there were over a hundred colonies in the yard. So that means there were a thousand pounds of bees distributed over that acre of ground.

The following day I examined the other yards. Of the entire 1111, only 111 undamaged colonies remained, all in the same yard. These 111 made me \$5,000 worth of honey that year. The rest of the yards eventually paid for the hauling it took to get the supplies home again.

It was more than three years before I got the yards cleaned. The \$5,000 helped, but at that time everything was high and at the end of the year I was \$3,000 in debt. I often wonder now how much those 1111 colonies would have made me that year.

What happened to the bees? Well, even the experts have not come to a definite conclusion. It was eleven years ago, however, and has happened to hundreds of other beekeepers wherever apples are grown commercially—spray poison. In my case it was the first year of intensive spraying in the locality. The first year they used salt, sugar, glucose, and casein to make the arsenical spray appetizing to the codling moth and to make the spray stick to the apples.

This valley of 100,000 colonies of bees now has no bees, and the orchardists have to hire bees hauled in from a great distance to pollinize the apple blossoms. This is the stern sort of stuff experience is made of—and may I add nightmares too. It caused me to take a five-year absence to regain my health.—From the big sticks of Puget Sound.

Those "Ding-busted" Toppers

I enjoyed reading the article in the May American Bee Journal in regard to the top-entrance beehive. I read a description in one of the journals and it seemed reasonable, so I fixed one up according to description and pictures.

The author suggested a large hive, so I used one of the Dadant size, with a young Italian queen, hive body and two 6-inch supers. Then came our orange bloom and plenty of nectar. In a week or ten days I found they needed a super. I procured one and went at it without a veil. I took off the top entrance and brood chamber and then thought I might as well put on two supers, and walked 25 yards for a second one. When I came back it looked as if all the bees in south Florida were trying to find this top entrance. I had no veil and they seemed to imagine my mouth was the only thing that looked anything like that top entrance, and they tried to use it.

I had to run for a veil, and by the time I got back the south Georgia bees seemed to have arrived to look over this new affair. Then I had to put on the two supers and lift the brood chamber on top of that. It weighed 80 pounds. Then the cap on top of all, so I am thoroughly cured of this habit.

They are not practical when you have a heavy flow, or light for that matter. We frequently use six supers in a heavy palmetto or mangrove flow.

We had a nice orange flow this year, about forty pounds per colony; first one in fifteen years in this section.

Prospects look good for our next flow—palmetto and gallberry.

H. H. Tussey, Florida.

Diet for Children's Teeth

This is the title of an article under the syndicate "How to Keep Well," by Dr. Evans, which reports advice by Drs. Bunting, Jay, and Hard, concerning the decay of children's teeth. These doctors have been experimenting in a number of schools, orphanages, and homes in Michigan. They are convinced that tooth decay will not occur if the diet of children is right. The result of their findings shows that if the teeth of children are decaying, it is proof that their food is improper and that changing the diet to one that is correct will stop the decay when it does occur.

Dr. Evans includes a four-day diet, suggesting properly balanced menus for children which include stewed fruits, fresh fruits, cereal, toast, milk, beef stew, vegetable soup, cottage cheese, leafy and root vegetables, bread, butter, salads, and concludes with the statement that the diet calls

The Rambles of a Queenbee

By William M. Harlow

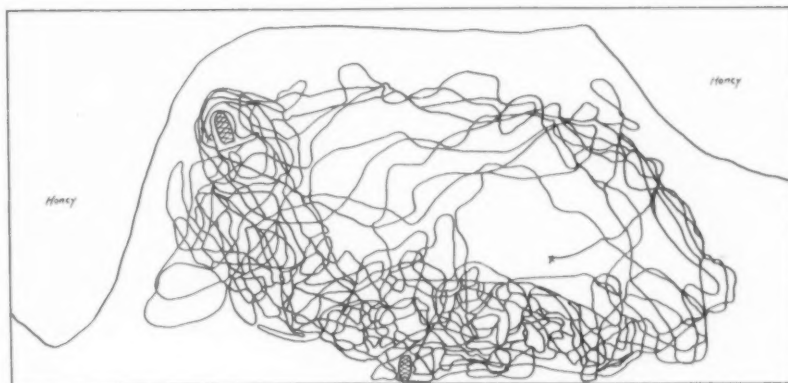


Fig. 1. The rambles just after emergence while still hunting for other cells to destroy

The use of glass-walled hives has contributed much to our knowledge of bee behavior and has made possible certain observations which by any other method would have been extremely difficult, if not impossible. Recently it occurred to the writer that in such a hive the "wanderings" of an individual bee over the comb could be recorded by following its path on the glass above it with a black paraffin pencil. This record could then be made permanent by transferring it to a piece of velum tracing paper placed upon the glass. (Xylene or any other paraffin solvent may be used to remove the lines from the glass.)

This procedure was used and the accompanying illustrations indicate the path taken by a young queen for half-hour periods, respectively. In both figures the lower boundary of the honey is marked by a solid line and the remainder of the comb is fairly well filled with sealed brood.

The lower "X's" show in each case the positions of the queen when the tracing was begun and the upper crosses close the half-hour periods.

Figure 1 was traced several hours after emergence from the queen-cell in the upper left-hand corner, and while she was still searching for other cells to destroy; the only one on this side of the comb is shown at the bottom. Figure 2 was traced some time later, after mating had taken place and during the first hours of egg laying; the circles show where the eggs were laid.

Although it would be necessary to repeat this experiment a number of times before drawing any general conclusions, the "mileage" covered and the portions of the comb inspected are quite different in each case. For making records of this nature, the paraffin pencil method seems worthy of trial, since it may be used in following any marked bee which will stay on the same side of the comb long enough to be observed.

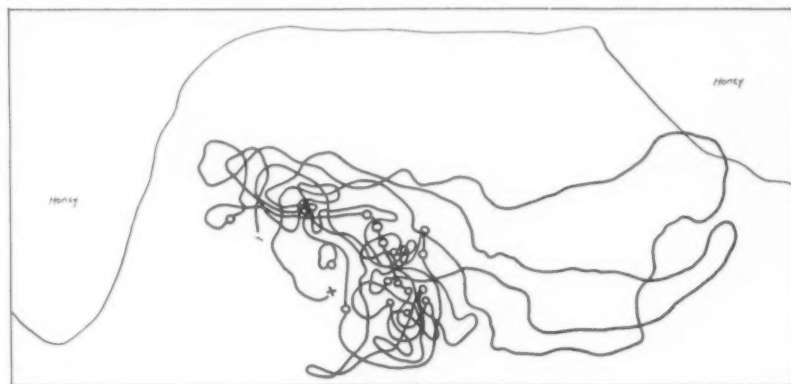


Fig. 2. After she got down to egg laying. The circles show where the eggs were deposited

for more milk, meat, fruit and vegetables than most children get.

The diet is conspicuously lower in carbohydrates than ordinarily given children. Drs. Bunting, Jay, and

Hard particularly limit sugar. When it is necessary that children have a sweet, they advise the use of honey instead of sugar.

Alfred H. Perring, Florida.

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

A DEAL IN BEES

I have eighteen colonies of bees, also a neighbor who is unable to do much work on account of ill health. Last spring I told my neighbor if he would let me put my bees in his back yard and watch for the new swarms and let me know, I would come and hive them and furnish all equipment and give him one-third of the surplus honey. About three months later he asked me if he was to get one-third of the increase besides the one-third of the honey. I told him I agreed to give him one-third of the honey, and he said he understood he was to get one-third of the increase. He had no supplies. I purchased a pair of gloves and a veil for him to use, and I furnished all hives and foundation. I ordered from you people \$4.00 worth of foundation in his name on account of bees at his place. He has cleaned several frames and put foundation in them and complained he did not think there was any money in bees. I told him I would guarantee him \$10.00 for his work or one-third of surplus honey. About three weeks ago he said he would prefer the \$10.00, so I paid him and used the surplus honey in dividing some of my colonies.

I want to be fair with him. As I work nights and sleep days, I am unable to watch for swarms. Do you think one-third of surplus honey is a fair deal, or should I give him one-third surplus honey and one-third of increase?

KANSAS.

Answer—The price you are paying is very fair. The only objection that might be raised would be that the more swarms you would have the less surplus honey there would be. But if you pay cash, I do not see how this man can be dissatisfied.

We have often had bees on lands of other people and we paid them \$1.50 each for catching the swarms. But we did not give them any of the swarms. We usually gave one-fifth of the surplus honey for land rent. That is a sufficient amount. At present we pay \$25 per year for an apiary location and do not give either swarms or honey.

TO GET QUEEN-CELLS

I have a few questions I would like to ask you well in advance of the time I want to use the advice I may obtain.

I have a colony of bees from which I want to get as many queen-cells as possible, early next spring. If at that time I should put on a queen excluder and leave the queen loose in the lower hive body, and put a few frames of brood and eggs above, do you think the bees would start queen-cells up there? Could I hasten the work some by early and slow feeding?

I have twenty-two colonies of bees. Do you think it probable that I would have enough drones, say the latter part of April, to fertilize a few queens?

If you should advise a better plan I would be grateful.

ILLINOIS.

Answer—It is all right to rear queens from your best colony early in spring. But you will find it difficult to rear queens in the same hive that contains a queen and not divide it too much. If the brood is just put into an upper story above the brood chamber containing the queen, you will not get them to rear queen-cells unless they are far enough removed from the chamber containing the queen, say two or three stories, and even then they may not rear queen-cells at that season of the year.

I would therefore suggest that you remove the queen entirely and use her in some other colony. This would enable you to keep your brood chamber compact, so that it would keep warm enough to produce good queens.

As to the drones, you may count not only on those of your own hives, but also on

those of your neighbors, even a mile away, for queens do not mate close to the apiary, but often as far as a mile, and even farther. But you had best rear some drones also, when you rear your queens. In fact you need to rear the drones earlier, for it takes them longer to mature from the egg than it does the queens, by about ten days.

There is no doubt that feeding will hasten the work of breeding, whether worker, queen or drone.

AN OIL TO ATTRACT BEES

I have been a subscriber to the American Bee Journal for a number of years and will thank you for the following information: There is an oil that I have always heard had a tendency to attract honeybees, and which I thought was oil of anise, but overheard an argument a few days ago in which it was claimed that it was oil of bergamot. I will thank you to put me right on this matter.

FLORIDA.

Answer—The best thing to attract honeybees is old comb burnt so as to make more or less smoke. It is certainly better and more perceptible at a distance than either oil of anise or oil of bergamot. But it will not attract bees much during a honey crop, for at that time the honey in the flowers has the greatest attraction for them. As to deciding between oil of anise or of bergamot, I cannot do it, but I believe there is but little difference between them. In a time of great scarcity of honey I have seen them attracted by the odor of oil of turpentine.

SALT FOR BEES

Not long ago I saw in some bee magazine a suggestion relative to giving bees a small amount of salt (common) mixed with other salts as a treatment for spring dwindling. If you recall this or have any recommendation in the matter, it will be appreciated.

NORTH CAROLINA.

Answer—Salt is undoubtedly as good for bees as it is for cattle, but whether it will stop or prevent spring dwindling is a question which I cannot affirm. Try it, giving it in water at such places as they are accustomed to frequent.

BEES FLYING IN COLD

In November I pack my two colonies of bees in a packing case side by side, with four inches of packing material on bottom and about seven inches on sides and ends, with a foot on top. I used oat chaff.

For the last several days the bees in the one colony keep flying out and seem all stirred up about something, and quite a few of them have frozen to death outside in snow. The thermometer was standing at 10 to 20 degrees above zero and bees were out crawling around on the case sides. All that flew out would freeze to death before they could get back.

Can you tell me what is wrong and what I can do to stop it?

NEW YORK.

Answer—The only thing that I can surmise is that some mice may have entered into the chaff and are disturbing the bees by their motions. This may not be the case, but you ought to be able to find the cause of the disturbance. This should not be allowed to continue.

BITTERWEED IN ARKANSAS

Being a subscriber to the Bee Journal for a number of years, and interested in bees as a hobby or pleasure in my spare mo-

ments, I now wish some information. While on a vacation in northwestern Arkansas this summer, I noticed bees a-plenty, in September, working on a weed, but nobody had any bees. I got the impression that you could not produce honey there—that something made it bitter. While there I made arrangements to purchase 280 acres of land, not for bees, but I would like information if bees could be raised and honey of marketable value produced there. This is in Benton County, Arkansas.

MICHIGAN.

Answer—We know that there is a weed, called bitterweed (*Helenium tenuifolium*), which yields honey in some parts of Arkansas, as well as in Tennessee and the Carolinas. This produces a honey so bitter as to be entirely unpalatable to human beings, although the bees can use it.

Cotton yields honey a few weeks previous to the bitterweed blooming, and if a man is careful he can probably secure good honey from it. But one must be very careful not to mix the honey, as it would make it entirely unfit for sale.

We do not know exactly in what parts of Arkansas the bitterweed grows. If any of our readers can give us information, we will gladly insert it in the question and answer department.

HONEY FOR RADIATOR

I have lost my formula for using honey in radiator for anti-freeze, and would ask if you will kindly state how much to use for temperatures to 35 below zero.

WYOMING.

Answer—Half and half, water and honey, will stand almost any temperature. Even if it freezes, it does not get hard and is not likely to break the container. Remember that heating evaporates the water and makes it stronger.

Honey mixtures have not proven generally satisfactory and are no longer recommended.

A good mixture is one-third honey, one-third alcohol and one-third water.

FOUNDATION FOR PACKAGE BEES

I wish to ship in some package bees next spring. Will have to start them on full sheets of foundation. Will they draw out the foundation if I give them plenty of honey in the comb in shallow frame supers placed above a queen excluder?

IOWA.

Answer—Yes, of course, the bees will readily build the foundation into comb if they have a good laying queen and plenty of honey. Put the honey, as you suggest, above a queen excluder, in the upper story.

If you wish to hasten the laying, give them a little sugar syrup in a feeder.

BEEKEEPING IN RUSSIA

I am doing some research work on Russia and would like to know about the bee industry there. I understand there is much beekeeping in Russia. Could you tell me whether I could get definite information?

MINNESOTA.

Answer—Russian progressive beekeeping is following our methods. This comes from the fact that a Russian beekeeper and scientist translated the French edition of the "Hive and Honey Bee" some thirty-two years ago. This beekeeper, Mr. G. Kandratieff, was manager of the Imperial Theater of St. Petersburg, now called Leningrad. Mr. Kandratieff was born in 1834. His portrait was published on page 57 of the 1901 edition of the *Revue Internationale d'Apiculture*, twenty-third year.

A. T. Zoubareff also published a treatise on beekeeping, in 1900, in which he published the portrait of Charles Dadant. The last edition of the Russian "Hive and Honey Bee" was published in 1929, as was also a

translation of the "Dadant System of Beekeeping." They have also published a translation of the A B C & X Y Z of Root, a few years ago. The last correspondence we had with Russian beekeepers was with V. S. Raikovsky, Experimental Institute of Agronomy, 9 K 7, Kasatchy Pereoulak, Leningrad.

There is an establishment for progressive beekeeping near Moscow, but I cannot just now recollect their address.

From the Little Blue Kitchen

(Continued from page 23)

by one who had been a guest at many homes to be the "best ever ate." Hence such recipes as contained honey, Honey Lady passes on with great confidence.

The dinner started with a fruit cocktail, and this is how it was made:

Diced pulp of one good-sized grapefruit.

Diced pulp of two medium-sized oranges.

One small bunch Malaga grapes, seeded and diced.

One small bunch blue grapes, seeded and diced.

Two bananas, sliced thin.

One bottle (small size) Marischino cherries.

After the other fruit had been well mixed together and the portions placed in the cocktail glasses, three whole cherries were arranged on the top of each. Then the liquor from the cherries was thoroughly mixed with half a cup of honey. The result was one of the most delicious fruit cocktails imaginable. (This served six people generously.)

The sweet used was honey, both for the candied sweets and in the cabbage salad. The dressing used for this salad appeared in a previous number, so the Blue Kitchen readers already have it. It is Honey Lady's favorite.

The portions of salad, or cole slaw, were arranged on crispy leaves of head lettuce on salad plates, and on top were slices of olives stuffed with pimentos. This quite glorified the ordinary cole slaw, and all thought the "flavor" especially good and different, which, of course, between us, was due to honey being substituted for sugar in the dressing.

There were no other salads, but the pumpkin pie was also "flavored" from the honey pots. In other words, the recipe recently given in Blue Kitchen for pumpkin pie was used, Honey Lady using one-third cup of honey instead of the usual cup of sugar. The honey, blended with spices of four kinds—cinnamon, allspice, ginger and nutmeg—gave a zest to the lovely pumpkin, straight out of a nearby garden.

Ida Laue's Cookies

From the store of wonderful recipes owned by Miss Ida Laue, of Philadelphia (who sometimes visits Honey

Lady and concocts fine things in Blue Kitchen), this recipe for cookies was obtained and tried out with great results. These cookies will be appreciated by the school kiddies at recess or in the lunch box:

Honey Cookies

- ½ cup butter
- ¾ cup extracted honey
- 1 egg
- ¼ cup milk
- 2 ½ teaspoonfuls baking powder
- 2 cups flour
- ¼ teaspoonful vanilla

Beat the egg and add to the milk. Then to these add the honey and stir briskly until fully blended. Then add the butter. Mix baking powder and one cup of flour and add to the above. Then add the other cup and the vanilla.

Place in the icebox to harden. Roll out on floured board until one-fourth inch thick. Cut with biscuit cutter. Sprinkle with granulated sugar and cinnamon and chopped nuts if desired. Bake in hot oven, 375° F., from eight to ten minutes.

Apple Pudding—Honey Sweetened

Honey Lady was dining with a friend recently and the dessert was the most adorable apple pudding imaginable. Honey Lady asked how it was made, and finding that honey was the sweetening element, asked for the recipe. Tried it next day to be sure the proportions were just right. They were, and in this year, when apples ought to be eaten plentifully both for health and economy, Honey Lady hopes many housewives will delight their families with this apple-honey sweet:

Apple Pudding

- 3 cups finely diced apples
- ¾ cup honey
- 2 tablespoons of flour
- 1 teaspoonful cinnamon
- Pinch of allspice
- Pinch of ground cloves

Mix dry ingredients, then the honey and pour over the apples. Then make this sauce: Half cup water, half teaspoonful lemon extract. Pour that over the apples.

Take a tablespoonful of butter and dot the top of the pudding with it. Then make a short biscuit dough and cover over the pudding top with it. Place in medium oven and bake for twenty-five minutes.

Honey Shortcake from Granulated Honey

Here is a way to use up some of the honey that may have granulated. A little lady who lives on a big farm, but who, like many of the rest of us, hasn't very much spare cash, uses all the ways and means possible to make available things right on the farm. So she has concocted this recipe for a wonderful shortcake using granu-

lated honey. Honey Lady served it recently as an "every-day" dinner dessert and it proved a tremendous success:

The Recipe

- 3 cups flour
- 2 teaspoons baking powder
- 1 teaspoonful salt
- ½ cup shortening
- 1 ½ cups sweet milk

Roll quickly and bake in a hot oven. When done, split the cake and spread lower half with butter and the upper half with one-half pound of honey which has granulated. If the honey should prove too hard to spread, warm the knife, and your troubles will be over!

Let the cake stand after placing the top layer on the buttered bottom layer. The honey and butter will mix and your cake will be ready to serve. Milk or cream poured over each of the servings will make it a perfect dessert.

This same little thrifty lady uses all the sour milk she can in her kitchen, and one of the uses is to combine it with honey in making drop cakes. Here is the recipe, tried out in Honey Lady's "laboratory":

Honey Drop Cakes

- ½ cup honey
- ½ cup sugar
- 1 cup butter or lard
- ½ cup sour milk
- 1 egg
- ½ tablespoonful soda
- 4 cups sifted flour

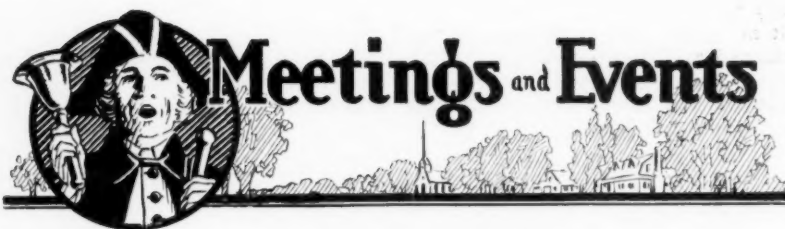
A Little New Proof That Honey Does Not Add to One's Weight

Honey Lady has a friend who was forced to have her teeth extracted and to "go for a few weeks" until her gums shrink enough for the "store set" to be fitted. This woman was an inveterate eater of cane-sugar candy (one reason why the good old natural teeth succumbed to decay).

Well, when she had to do without her daily ration because there were no teeth to chew it, she was half frantic for sweets until somebody suggested honey. Though she had said before she didn't "care for it," she yielded to advice, and whenever she wanted a sweet she reached for her honey jar and took a spoonful or two of its amber contents.

During this period the lady got weighed, and to her surprise found she had lost ten pounds in a month's time. She was so pleased that she made a vow that from thence on, "teeth or no teeth," she would not use manufactured sweets, but eat honey.

Nuf sed! Scientists or others to the contrary notwithstanding, when it comes to reducing, the proof of honey is in the eating! Selah!



Southern Conference at St. Petersburg, Florida, February 2-3

The Southern States Conference convention is to be held at St. Petersburg, Florida, February 2 and 3. The first dates announced were February 5 and 6. Those interested will please note the change—February 2 and 3. This is the big annual meeting of the South and all beekeepers who can attend will find it worth while.

Plans have been worked out whereby the most reasonable transportation possible is available for those who wish to attend. The date of the Conference is just before the Mardi Gras at New Orleans. Railway companies offer round trip fares at reduced rates.

Some of those interested in attending the Conference will want to leave as quickly as possible; others will want to make the trip leisurely. Those pressed for time will find arrangements made for accommodations by a most comfortable modern bus with a seating capacity of thirty people. The cost of the bus from New Orleans to St. Petersburg and return will be \$20, provided the entire seating capacity is taken.

Those not pressed for time and wishing to make a leisurely trip will find a truck available with a seating capacity of fifty people, with a charge of \$1.00 for the round trip, with full protection against inclement weather, if such should be encountered.

Those desiring to attend the Conference from Texas and states north and west would depart from New Orleans, using either way they desire. Those from other sections would join the bus or truck en route. Those wishing to come by automobile will find a wonderful hard-surfaced road all the way from New Orleans to St. Petersburg.

The Conference will be one of the most interesting ever held and will offer a wonderful chance to see Florida. Side trips are being arranged to points of special interest, particularly to the West Florida State Fair at Tampa. Those who wish to see orange groves and trees loaded with golden fruit will never forget the trip.

Those who wish to take advantage of either mode of transportation for this meeting, February 2 and 3, write at once to W. E. Anderson, Box 517, Baton Rouge, Louisiana. We are going to St. Petersburg. Are you?

The schedule for the bus from New Orleans to St. Petersburg and return is as follows: Leave the bus station at New Orleans at 8 o'clock a. m. Sunday, January 31; arrive in Marianna, Florida, in the afternoon. Leave Marianna at 7 a. m., Monday, February 1; arrive at St. Petersburg in the afternoon. The cost of round trip will be \$20.00, provided thirty people go.

Those wishing transportation by truck will leave the bus station in New Orleans at 8 a. m. Friday, January 29; arrive in Pensacola, Florida, in the afternoon. Leave Pensacola at 8 o'clock Saturday morning, January 30; arrive at Tallahassee Saturday afternoon, where a visit is arranged to the state capitol and state buildings. Sunday, January 31, leave Tallahassee at 8 a. m., with a stop at the State University at Gainesville en route to Ocala, arriving at Ocala in the afternoon. Monday morning, February 1, visit Silver Springs and arrive at St. Petersburg Monday afternoon. Cost, \$1.00 for round trip.

Those desiring to attend the Conference either way should advise W. E. Anderson, Box 517, Baton Rouge, Louisiana, not later than January 20.

League—Institute—Industry in Meeting at Columbus Jan. 26-28

The meetings of the American Honey Producers' League, American Honey Institute and the Bee Industries Association will be held at Columbus, Ohio, on the dates mentioned, at the Deshler-Wallick Hotel. This is the big northern meeting just as the Southern Conference is the big southern meeting of the year.

The Ohio Beekeepers' Association will act as host. The meetings will be in the Hall of Mirrors, which will be headquarters for the entire session. Elaborate preparations are made for the entertainment of those attending. Columbus has one of the finest airports and planes from all directions arrive daily. For speedy, safe and convenient travel, airplane service offers an inducement, a thrilling and interesting journey. Railroad and bus connections are available from every direction. In addition to the Deshler-Wallick Hotel, there are many others within three or four blocks.

Among those taking part in the program are Dr. W. E. Anderson, of

Louisiana; Dr. James I. Hambleton, Bureau of Entomology; H. F. Wilson, of Wisconsin; L. C. Dadant; E. J. Anderson, Pennsylvania State College; Harold J. Clay, marketing specialist, Bureau of Agricultural Economics, Washington; Prof. Millen, of Ontario; Morley Pettit; George Demuth, editor *Gleanings*; C. W. Hauck, Ohio State University, and many others. Detailed information may be secured by writing to Charles A. Reece, State Department of Agriculture, Columbus, Ohio, who is arranging the convention program.

We urge, if it is at all possible for you to attend the annual convention of the League and the Institute in Columbus, January 26-28, that you do so by all means. If you cannot be there, let the League officials and the Institute know that you are behind them morally and financially by sending your dues to the League for 1932 and your contribution to the Institute before this meeting, so that they may know how to plan ahead. The secretary of the American Honey Producers' League is V. G. Milum, Champaign, Illinois.

Michigan Meeting, East Lansing, January 13

The sixty-second annual meeting of the Michigan Beekeepers' Association will be held at Michigan State College, East Lansing, January 13.

New Jersey Meeting at Trenton, January 28-29

The annual convention of the New Jersey Beekeepers' Association is in connection with the Agricultural Week at the New Jersey Department of Agriculture at Trenton, January 28-29. Subjects will relate to New Jersey beekeeping, such as "Honey Mail Order Business," "Management in Fall Flow Regions," "Suburban Beekeeping," "American Foulbrood Control," "Beekeeping for Women," "Package Bees," "The Horticulturist Beekeeper," "The Small Supply Dealer's Problems," "Marketing Honey." Elmer G. Carr, Sec'y-Treas.

Farm and Home Week at Illinois State

Through the efforts of V. G. Milum, a fine program is arranged in beekeeping for the Farm and Home Week program at the Illinois State University, Champaign, Illinois, January 12, 13, 14.

The beekeeping course is designed to help the beginner or amateur beekeeper and also the experienced honey producer. The first day covers the fundamentals of bee behavior and gives opportunity to get acquainted with beekeeping as a business.

The last two days cover the essential problems of beekeeping, includ-

ing the management of bees at different seasons, the control of disease, and the marketing of the crop.

In addition to the beekeeping courses, there will be others in agricultural economics, agricultural extension, economy, animal husbandry, dairy husbandry, farm mechanics, farm organization and management, forestry, home economics, horticulture, marketing, music, dramatics, and recreation. Speakers of national importance will also address the general sessions each day, among them being Arthur M. Hyde, secretary of agriculture.

V. M. Argo, V. G. Milum and M. G. Dadant will conduct the beekeeping course.

Utah Meeting at Ogden, Jan. 8 to 14

The Utah Beekeepers' Association winter meeting will be held January 8 to 14 at Ogden, during the livestock week. Important among subjects to be discussed are glass packing and canning and local marketing of honey. Several speakers from California are being invited to address the meeting. Report of National Honey Week is expected and much interest.

G. P.

Courses for Home Study in North Dakota

The North Dakota Agricultural College reports an increase in its farm home study courses during the past year. Many beginning apiarists enrolled in the beekeeping course. Arrangements have been made to take care of a larger enrollment this winter.

Subjects available this year include: Poultry; advanced poultry; turkey raising; beekeeping; fruits, vegetables and trees; forage crops; small grains; dairy cattle; dairy products; sheep husbandry; swine husbandry; beef cattle; feeds and feeding; farm structures, farm management; dairy herdsmen's and cow testers' course; business letter writing; bookkeeping; typewriting.

The instruction is free; most of the text material is free, but a fee is charged to cover the cost of postage, mimeographing, and paper.

The Department of Correspondence Courses, State College Station, Fargo, North Dakota, will be glad to send you a descriptive circular and enrollment blank.

California Convention a Pronounced Success

The forty-second annual convention of the California Association, with an attendance between 250 and 300, at the Sacramento Hotel, Sacramento, was a pronounced success.

A fine exhibit of honey, for which eight silver cups were awarded. The State Department and University of

California took an active part in the program. The election resulted as follows: Harry L. Weems, president, Bakersfield; George J. Triphon, vice-president, Sacramento; Cary W. Hartman, secretary-treasurer, Oakland; George J. Brown, chairman of Board of Managers, Fresno.

The convention presented George J. Brown, the retiring president, with a writing set; also, a comb honey wrapping machine was received by Mr. Brown from C. W. Aeppler, of Oconomowoc, Wisconsin, and members of the state association.

The 1932 convention will be held in Riverside.

Cary W. Hartman was honored by the convention by being elected honorary president by a unanimous vote.

The following resolutions were passed:

To Appoint Committee on Standardization of Honey

Whereas many agricultural crops are strictly standardized by law or by voluntary action on the part of the producers, and there has been considerable agitation for a standardization program for honey; and

Whereas little is now known as to how such a program should be entered upon, and it is apparent that the subject should be given considerable study before any action is taken; therefore

Be it Resolved, by the California State Beekeepers' Association, in convention assembled at Sacramento, California, this nineteenth day of November, 1931, that a committee on honey standardization be appointed to study the subject and to draw up legislation or regulations governing honey standardization when and if, in their opinion, it be necessary to take such action.

Opposition to Compulsory Certification of Honey

Whereas the apicultural industry is at the present time in none too favorable a financial position, and it is our opinion that additional regulation of the apicultural industry by governmental agencies would result in additional production costs and therefore should not be encouraged unless corresponding benefits may be anticipated; and

Whereas certification of honey would, in our opinion, result in these additional production costs without corresponding benefits at this time; therefore

Be it Resolved, that we, the California State Beekeepers' Association, in convention assembled at Sacramento, California, this nineteenth day of November, 1931, do hereby go on record as being opposed to any compulsory certification of honey at this time; and

Be it Further Resolved that the secretary be and is hereby instructed

to send a copy of this resolution to all bee journals in the United States.

Commendation of Work of Paine and Lothrop

Whereas the appearance of any agricultural product greatly influences its sale; and

Whereas filtration of honey greatly improves the appearance of the product; and

Whereas Mr. H. S. Paine, of the Bureau of Chemistry of the United States Department of Agriculture, has done excellent work in investigating the honey filtration problem and the removal of colloids from honey; therefore

Be it Resolved, that we, members of the California State Beekeepers' Association, in convention assembled at Sacramento, this nineteenth day of November, 1931, do hereby commend the United States Department of Agriculture and Mr. H. S. Paine for their efforts in this respect, and urge that the department continue the investigation until a commercial method is developed.

Cary W. Hartman, Secretary.

Report of 1931 Convention, Washington State Beekeepers' Association

A program of unusual variety and interest, but an unexpectedly small attendance of beekeepers, characterized the 1931 annual convention of the Washington State Beekeepers' Association. All sessions were held in the convention room of the Hungerford Hotel in Seattle, on November 23 and 24. President M. F. Mommsen, of Parkland, presided at the business meetings and acted as chairman during the speaking program.

Features of the program consisted of several talks by Mr. F. E. Todd and Mr. E. L. Sechrist, of the U. S. Bee Culture Field Station at Davis, California, and discussions by Mr. A. W. Finlay, provincial apiarist, and Mr. J. B. Munro, deputy minister of agriculture, both of British Columbia, Canada. Following the annual banquet on the evening of November 23, Mr. Sechrist entertained the delegates with the tales of his beekeeping experiences in South Africa, Porto Rico, the Hawaiian Islands, and other foreign lands. His lecture was illustrated by lantern slides, the majority of which were made from photographs taken by Mr. Sechrist.

"Honey in the Dream Kitchen" was the topic of a very practical address made by Miss Bernice Reddington, in charge of the "Prudence Penny," or home makers' department of the Seattle Post-Intelligencer, morning newspaper. Miss Reddington stressed the fact that her department was seriously hampered in its work by a lack of reliable

recipes including honey. She stated the Seattle housewives were showing increasing interest in honey, but that she was unable to supply them with recipes which were suitable for a wide variety of occasions, or for use in cooking with the Northwestern flours, which differ from the flours of the East and central states. As a result of Miss Reddington's talk, President Mommsen appointed a committee to obtain honey recipes and supply Miss Reddington and other persons in positions to give publicity to honey uses.

Standardization of honey and of honey containers was a subject in which the convention evidenced considerable interest. Mr. Sechrist, Fred Mandery, of Tenino, Washington, and Mr. Herbert Smith, manager of the retail store of Sears, Roebuck & Co. in Seattle, discussed this topic from various angles. Mr. Smith outlined the modern honey selling methods used in his store. On Monday afternoon the meeting was adjourned early so that the beekeepers might visit the warehouses and honey packing plant of the Pacific Slope Honey Company.

Reports on bee inspection work in Washington, California and British Columbia were given by Dr. R. L. Webster of Washington State College, Mr. Frank Todd, and Mr. J. B. Munro. (Mr. Munro is the brother of the Munro in charge of apiary inspection in North Dakota.) Approval of the burning method of controlling American foulbrood was expressed by the speakers and by several of the commercial beekeepers present. Mr. C. W. Higgins, Yakima County inspector, related some of his experiences in fighting the disease. The value of bees for pollination was discussed by several speakers. Dr. W. Ray Jones, of Seattle, gave a very interesting technical discussion of the effect of bee sting poison in the human body, the cause of pain, swelling, inflammation and, in sensitized persons, sickness and sometimes death. He explained the action of the drug adrenalin in counteracting the poison, and told how life may be saved by the prompt use of this remedy, applied hypodermically.

Mr. George Mayo, experienced commercial beekeeper and honey packer of Puyallup, gave a practical talk entitled "Depression and the Commercial Beekeeper." Mr. Mayo has produced large crops of fireweed honey, both extracted and in the sections, and for two consecutive years won the sweepstakes trophy in the Bee and Honey Department of the Western Washington Fair. Mr. Frank Ross, for many years superintendent of the Bee and Honey Department at this fair, and a leader in the Pierce County Beekeepers' Association, spoke on "Honey Exhibits as an Advertising Medium." Mr. Ross



E. L. Sechrist and F. E. Todd, at the Washington meeting

cited a number of experiments which he had tried to prove the value of honey exhibits at fairs and in store windows as an inducement to the public to purchase honey. Mr. A. K. Crews, a student at Washington State College and a leader in 4-H Club work, told of his part in numerous bee and honey exhibits and demonstrations throughout the state and of his trip to Washington, D. C., earned through his efforts in studying and teaching others about the activities of bees.

During the coming year committees representing the association will investigate freight rates on honey and in cooperation with committees of the Oregon State and California State Beekeepers' Associations, make an effort to have these rates reduced. Other committees will go into the matter of standardization of containers and of obtaining increased appropriations for bee inspection work through the Washington State Legislature.

N. N. Dodge, Washington.

The Wisconsin Annual Meeting

The annual meeting of the Wisconsin Beekeepers' Association, held at the Hotel Pfister in Milwaukee on December 2, 3 and 4, held well to its record of good attendance, and particularly well to the quality of its program. Plenty of practical material from its member beekeepers as speakers and an equal amount from investigating students.

Clarence Gwin is doing some excellent work in connection with the constituents of beeswax, its production, purity, etc., as major work in his thesis requirements.

Erwin Alfonsus gave a very interesting talk on superseding and

swarming, with some original observations well worth while.

Prof. H. F. Wilson explained some of the work being done in his department on honey. Their findings are that honey will keep best in storage if a temperature of 40 degrees or lower can be maintained, and that the dangers of fermentation are greatest at a temperature of 60 degrees. The work has been under way five years, and their findings are still far from complete.

The talk of Miss Snapper, of the Pabst Corporation, was particularly convincing as to the value of the American Honey Institute. Her company alone has sent out in excess of 100,000 leaflets and booklets either wholly or partly dealing with honey in combination with their products.

V. G. Milum, of the University of Illinois, spoke on "The Honeybee's Span of Life." Speakers within the state included President A. H. Seefeldt, C. D. Adams, John Kneser, L. W. Parks, and State Entomologist E. L. Chambers.

The banquet session, during which the Bee Kingdom medal was presented to Mr. C. P. Dadant, is detailed in another column.

Manitoba Short Course

The annual short course in beekeeping is to be held at the Manitoba College of Agriculture at Winnipeg from January 18 to 29. Prof. A. V. Mitchener and L. T. Floyd will give the lectures, assisted by those from other departments of the college whose work is of interest to the beekeeper.

Kansas Abandons Farm Week Program for This Year

Due to the stressed conditions of the times and a survey of a cross-section of the beekeepers in the state of Kansas, it is thought advisable this year not to hold a beekeepers' program during Farm and Home Week, February 9 to 12. Beekeepers will please make note, therefore. Those who usually attend this annual event will probably be disappointed, but under present conditions it seems most advisable to abandon the work this year.

R. L. Parker, State Apiarist.

Museum Exhibits Missouri Honey

Much of the first prize honey from the Missouri State Fair (1931) is now on exhibit at the state museum, together with several samples from honey of other years and from different parts of Missouri, including one sample of the greenish-tinted honey from the Chinese Tree of Heaven.

There is a fair imitation of a swarm of bees on an apple branch, using real bees to cover a wax form

and with wax models of fruit on spray to which they are attached. The case is further enlivened by wax models of mature fruit in spray, properly pollinated, and another spray improperly pollinated, and a third spray of artificial apple blossoms with bees working it.

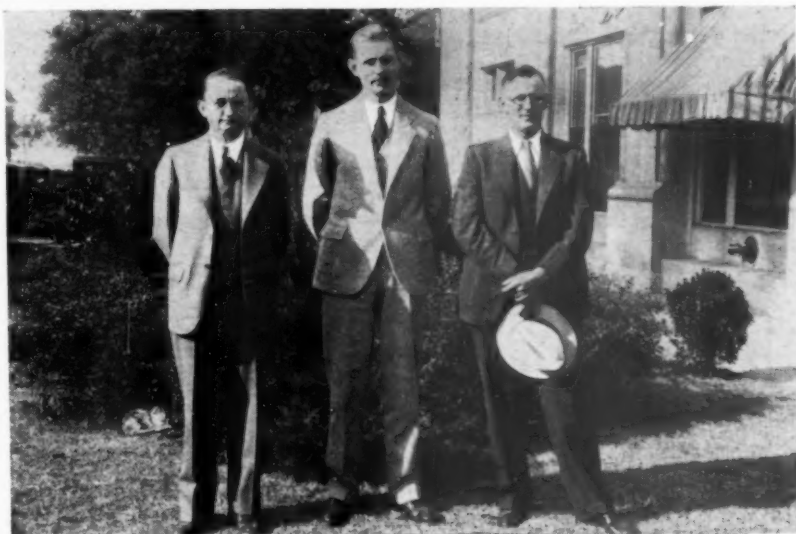
All these were loaned by Dr. K. C. Sullivan, plant commissioner. Mr.

J. F. Diemer, Liberty, Missouri, has donated samples of various types of bee cages, and a small model of a hive body and one super comb from Bobby Stewart, Webster Groves, Missouri, boy.

The wonderfully large comb described elsewhere, from Milan, Missouri, completes our exhibit.

A. C. Burrill.

New Alabama Officers at the Alabama Beekeepers' Meeting

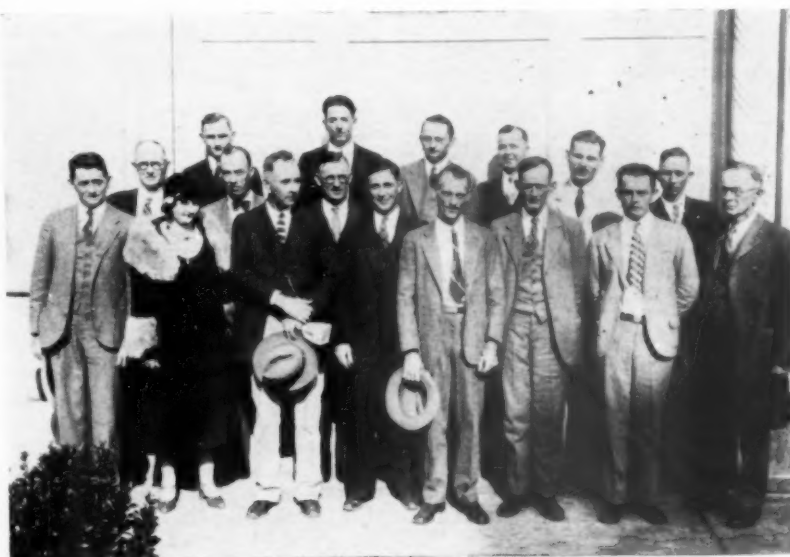


Left to right: W. E. Harrell, retiring President of the Alabama Beekeepers' Association; R. M. Pugh, provincial Apiarist, Regina, Saskatchewan; Thomas Atchison, State Apiarist, Montgomery, Alabama.

W. A. Ruffin, extension entomologist, was elected president; J. M. Cutts, Montgomery, vice-president; J. M. Robinson, secretary-treasurer.

The association was particularly pleased with the presence of Pro-

vincial Apiarist R. M. Pugh, of Saskatchewan. He and his wife motored from Saskatchewan, 2200 miles, in five days, went on to Florida and from there will return home.



Top row, left to right: R. G. Holder, H. B. Talley, W. E. Harrell, J. T. Haertel, R. M. Pugh, J. C. Duett.

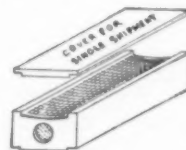
Middle row: Powell Owen, W. A. Ruffin, Thomas Atchison.

Bottom row: E. F. Day, Mrs. E. F. Day, Shelton Graden, H. C. Short, V. R. Thagard, Zed Gafford, W. Z. Gafford, J. M. Cutts.

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BEES AND QUEENS—L. L. FOREHAND'S STOCK THAT HAS WON A REPUTATION OVER MOST OF THE WORLD—can now be bought for less money than ever before.

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Red background, white letters.

Millions used. Come ready gummed.

Price: 100, 20c; 1000, 40c.

Larger size, 1 1/4 x 4 1/4. Price: 250, 50c; 1000, \$1.25.

AMERICAN BEE JOURNAL
HAMILTON, ILL.

When Writing Advertisers Mention The American Bee Journal

Missouri State Beekeepers' Association Organized

We have organized the Missouri State Beekeepers' Association to cooperate with the State Board of Agriculture in inspection. The plant division department conducting this work was trying last winter to get needed legislation, but failed, as there was no organization of beekeepers back of them.

Through the efforts of Dr. K. C. Sullivan and Mr. Diemer, of Liberty, Missouri, meetings have been held over the state and several county associations have come in as branches. We have the chance to build the largest association the state has ever had, with the fine cooperation from the State Board of Agriculture.

A. W. Gale, President,
Chillicothe, Missouri.

Yakima County Members Seek Way to Make Bees Pay

How to place beekeeping on a paying basis is given serious thought by members of the Yakima County Association at Washington. The first step will be through control of disease by rigid inspection and efforts for a registration law.

Beekeepers agree that disease is serious and reducing profits. The state funds available for inspection are insufficient. A plan has been proposed for taxing beekeepers 10 cents a colony to finance inspection. Members favor hiring an inspector under the state, they themselves paying for the work.

Washington state has appropriated \$2,000 a year for inspection in Yakima County, and in some years has obtained about \$400. This is not enough to handle the situation.

C. L. Farrar to Laramie—Kellogg to Massachusetts

C. L. Farrar, who has been in the beekeeping work at the Massachusetts State College, Amherst, Massachusetts, has taken the position with Dr. Sturdevant at the Bee Culture Field Station, Laramie, Wyoming, and Prof. C. R. Kellogg, of the Fukien Christian University, Foochow, China, has been appointed to his vacancy.

California's Stormy Petrel Faces Trial Again

C. I. Graham, California's well-known stormy petrel of foulbrood fame, has recently presented \$500 bail on a charge of moving bees infected with foulbrood and sworn to by H. N. Kingwell, county agricultural commissioner of Colusa County.

Graham demanded jury trial before Justice Williams at Colusa. The equipment moved by Graham, accord-

ing to the charges, was covered by a notice prohibiting disturbance, and the moving of the bees was in violation of the California apiary act. This is the fifth charge against Graham.

New Bulletin on Grading

The Wisconsin Department of Agriculture has recently issued a new bulletin, entitled "Wisconsin Standards for the Grading and Packing of Wisconsin Honey." It contains sixteen pages and gives in detail the complete regulations for grading and labeling of honey to be sold in that state. Wisconsin has stringent regulations regarding the sale of honey and requires that the origin of the product, whether in Wisconsin or outside the state, be shown on the label.

Honey Orange Nut Cake

- 1 lb. butter
- 16 to 18 egg whites
- 1 1/2 lbs. water
- 2 1/4 lbs. flour
- 2 1/4 lbs. honey
- 1 lb. chopped nuts
- 1 1/2 lbs. sugar
- 2 ozs. baking powder
- 8 ozs. candied orange peel

Beat the shortening, honey and sugar until creamy. Add the water and flour alternately and beat until smooth, then add baking powder, nuts and orange peel. Lastly fold in well-beaten egg whites. Pour into lined pans having a depth of about three inches and bake in a moderate oven for about forty-five minutes.—From American Independent Baker, August 14.

Presentation of Bee Kingdom Medal

(Continued from page 16)

page, from which we have all derived so much benefit.

They also wish to express their abiding affection for you; they are grateful that you have been spared so long after the allotted span, and pray that you may be spared for many days to come, to enjoy the company of your splendid family and your innumerable friends.

And I remain, dear Mr. Dadant, with much affection,

Your friend,
Joseph M. Barr."

The attendance at the convention was not large; consequently the group at the banquet was small, there being fifty-two present. Vocal solos rendered by young Jim Barr and Miss Rose Deutsch, accompanied on the piano by young Mrs. Barr, were exceedingly delightful because of their classic setting and appropriateness.

It was suggested that a pilgrimage be made during the summer of 1932

to visit the Dadant home and to extend to Mr. Dadant an appreciation from the beekeepers who might be able to attend. We all concluded with the hope that Mr. Dadant might continue on to his one hundredth birthday.

Further Information on Chlorine Treatment of Equipment

(Continued from page 14)

twenty-five parts per million may be used. In sewage disposal plants about 350 parts per million are added. The strength of the solution when used according to these directions is approximately 1500 parts per million, varying with the temperature; the lower the temperature the greater the capacity of the water for taking up the gas.

From a practical standpoint the temperature of the solution seems to be of very little importance. Combs were sterilized at a temperature just a little above freezing and again at summer temperatures of around 75° or 80° F.

The effect on paint is ordinarily slight, but varies with the kind of paint.

Pollen masses and the dried-up foulbrood scales become soft and disintegrate. All such material is readily cleaned out of the cells by the bees.

The combs should be in an upright position and every part of the equipment under water.

The solution should not be used a second time, but a new solution made up for each set of equipment to be treated.

A closed top for the tank is not necessary.

An excess amount of gas will do no harm. Leaving the combs in the solution a greater length of time than recommended will not injure them. Chlorine is cheap and it is better to use an excess, rather than run any risk of not using enough.

Chlorine water when used as directed depends for its effectiveness upon the fact that its strength is being maintained throughout the period of treatment by the continuous stream of chlorine gas bubbles passing through it.

Liquid Chlorine

Liquid chlorine may be purchased in steel cylinders of various sizes, but the 100-pound and 150-pound sizes seem best suited to the needs of the beekeeper. Even though one needs less than one hundred pounds of chlorine, it is usually cheaper to get the 100-pound cylinder, since the price per pound of chlorine in the smaller cylinders is much higher.

In Minnesota, the usual price quoted by dealers in 100- and 150-

NEW

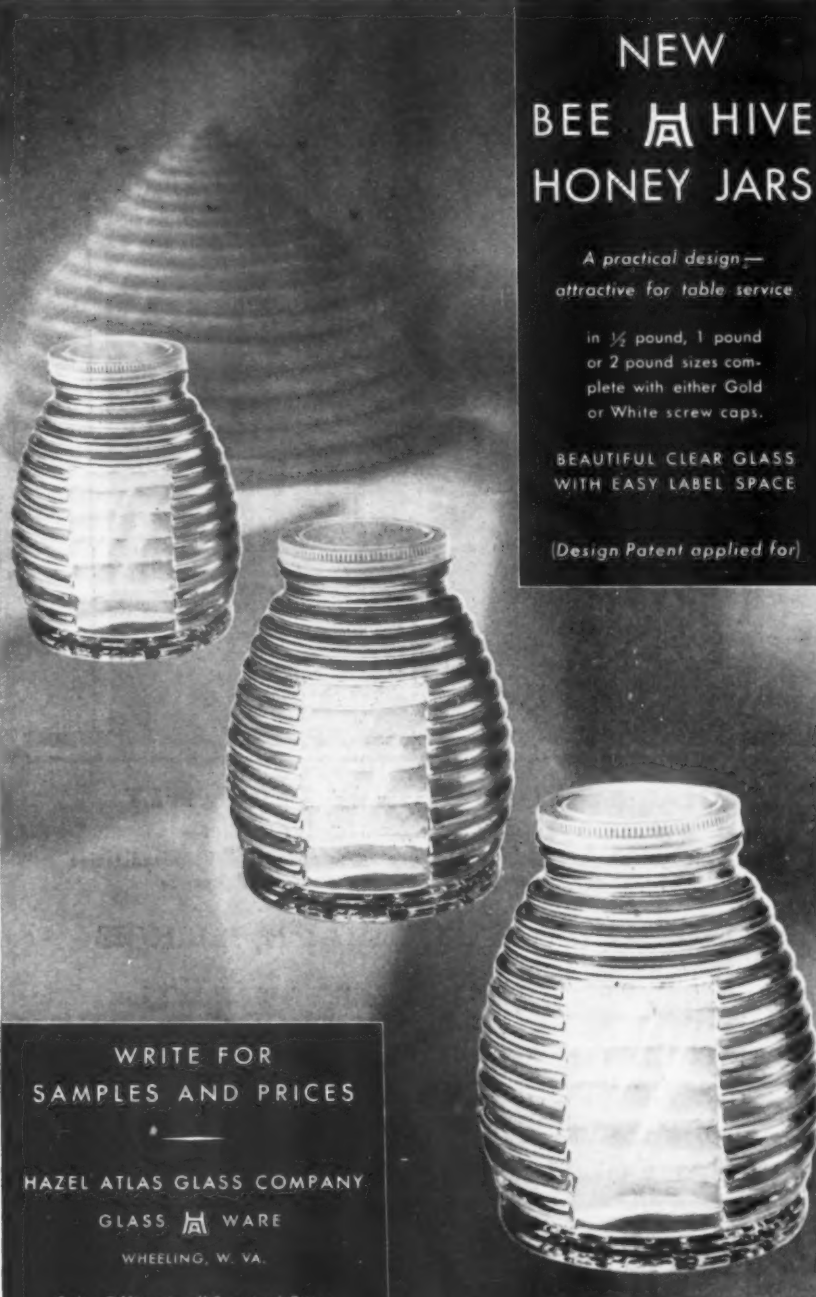
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A practical design —
attractive for table service

in ½ pound, 1 pound
or 2 pound sizes complete with either Gold or White screw caps.

BEAUTIFUL CLEAR GLASS
WITH EASY LABEL SPACE

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When you buy RUSCH supplies you get **QUALITY SERVICE** and **REASONABLE PRICES**.

A trial order will convince you.

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Working Your Wax Into Non-Sag Brood and Super Foundation for You for Cash

Prices of wax are very low, and so of course will be on foundation. We do not, however, offer price as an inducement, but merit only. Last two seasons have established and proven the merit of our claim for our Non-Sag Brood Foundation. For 1931 we submit the further improvement of making our Medium Brood two standard widths— $\frac{1}{16}$, seven sheets to the pound, and $\frac{7}{8}$, eight sheets to the pound.

Write us for samples and prices

GUS DITTMER COMPANY . . . AUGUSTA, WIS.

pound cylinders is 10 cents per pound laid down at the purchaser's station, and with return freight for the cylinder paid by the company. In some other states the price is lower. A deposit of \$20 is required on each cylinder, and this deposit is refunded when the cylinder is returned.

Since one hundred pounds is more chlorine than would be required by many beekeepers, a number of them may find it advisable to pool their interests in treating their equipment. It is also possible that some chlorine dealers may find it worth while to establish treating stations, where nearby beekeepers may bring diseased equipment for sterilization during the winter. One dealer in St. Paul, the Laundry Supply Company, 1086 Raymond Avenue, St. Paul, Minnesota, has already established such a station. It would, of course, be necessary to secure a permit from the state apiary inspector before diseased equipment could be moved.

In using liquid chlorine, one must keep in mind that it is under great pressure in the cylinders, the pressure varying with the temperature. Care must be used to open the valve very gradually. When in use the cylinder should be in an upright position.

The following list of manufacturers and dealers from whom liquid chlorine may be purchased in 100-pound and 150-pound cylinders is not a complete one, but it includes the names of all which we have obtained so far. Branch houses of many of these companies and dealers may be found in most of the larger cities of the country:

1. Arnold, Hoffman & Co., 350 Madison Avenue, New York City.
2. Brown Company, Portland, Me.
3. Diamond Alkali Co., Painesville, O.
4. Electro Bleaching Gas Company, 9 East Forty-first Street, New York City.
5. Hooker Electro-chemical Company, 60 East Forty-second Street, New York City.
6. Laundry Supply Company, 1068 Raymond Avenue, St. Paul, Minn.
7. Mathieson Alkali Works, Inc., 250 Park Avenue, New York City.
8. Pennsylvania Salt Manufacturing Company, Widener Bldg., Philadelphia.
9. Tacoma Electro-chemical Company, Tacoma, Wash.
10. Wallace & Tiernan Company, Newark, N. J.
11. Warner Chemical Company, New York City.

Literature Cited

- (1) Tonney, Fred O.; Greer, Frank, and Liebig, George F., Jr. The Minimal "Chlorine Death Points" of Bacteria. American Journal of Public Health, Vol. 20, p. 503.

Crop and Market Report

Compiled by M. G. Dadant

For our January issue we asked reporters to answer the following questions:

1. What percentage of the 1931 honey is left on hand?
2. Will it move before spring?
3. What offers are being made in a jobbing way for honey?
4. Is comb honey cleaning up well?

Per Cent of Honey Left on Hand

The reports coming in this year as compared to those of a year ago show very much less quantity of honey on hand, except in some sections. As a general thing, however, the percentage left is far less than it was on January 1, 1931.

Those sections which are reporting a larger quantity on hand than previously are some of the New England states, particularly Vermont and Connecticut, and most of the southern states and two or three of the Atlantic Coast states, namely, New Jersey and Pennsylvania.

Most of the southern states are reporting a very heavy carryover so far of honey, and this is particularly true of Maryland, Georgia, Kentucky, Louisiana, and Texas. In Texas, however, it is apparent that honey is moving more readily than it is in some of the other sections, with a possibility of still getting cleaned up.

The only other sections which seem to have a heavy carryover of honey are Oregon and Washington, which state that still 50 per cent of the crop is unsold.

By the above we do not mean that there is but little honey left in other sections. There is plenty of honey left, but most of it is in the hands of beekeepers who are in distress as to how to dispose of their crop. The majority of beekeepers, however, seem to have gotten rid of their honey satisfactorily, although at much reduced prices. When we compare the prices of honey, however, with those of other farm products, we cannot see that they have shrunk in proportion as have wheat, cotton, and some of the other staples.

Will It Move?

Of course, those sections having the most on hand are in most doubt as to whether all of the honey will move before the new crop goes out. The Vermont reporters do not seem to think so, nor do those in Georgia and Florida and some of the other southern states. Pennsylvania, with nearly 75 per cent on hand, seems to feel the same way. The same is reported in New Mexico and possibly from Oregon.

However, we do believe that there is a distinction between the carryover on January 1 with what it usually is at this time of the year, and that is that there is not a big volume of carload lots still held on hand to be dumped on the market. In other words, if the retail markets will clear up what honey they have now and demand more, it is going to make for a shortage of honey by the time the spring season arrives.

Jobbing Offers

Of course, there are very few chances for jobbing offers with most of the beekeepers who have less than carload lots on hand. The prices ruling, however, are approximately in the neighborhood of 6 cents per pound for white honey f. o. b. shipping point in the entire eastern half of the country, north of the Ohio River. In some places the prices are ranging up as high as 8 cents, and we find where amber honey has in some instances sold as high as 7 cents per pound.

In the southern states the prices do not range this high, the usual range being from 4 to 5½ cents.

In the western states the lowest price range on good white honey is in the neighborhood of 5½ cents and from thus upward to 6½ cents per pound f. o. b. ship-

ping point. Reports have been sent in of white honey in five-pound pails selling as low as 7 cents per pound to the grocer, which is about the limit for low prices, we believe.

In California, where the light amber honey from Arizona and New Mexico as well as from the Imperial Valley accumulates, light amber honey can be bought at 4½ cents per pound and some of the darker amber for much less. Extra light amber is selling for about 5 to 5½ cents, with not a very heavy supply on hand.

Is Comb Honey Cleaning Up?

We would say from reports coming in that most decidedly comb honey is cleaning up in good fashion, and largely due perhaps to the fact that it is now more and more becoming wrapped in cellophane. Three or four reports have come in of comb honey not wrapped in cellophane which is hard to market because the market seems to demand a wrapped package. There have also been reports of an increasing quantity of bulk honey being packed in cellophane and distributed in this way with good success. By this we mean the type of package where the honey is that of the shallow frames cut into square cakes and then wrapped into cellophane. In this way we really have a comb honey without the section around it. Two or three large firms are now wrapping this to advantage and it looks like this in the future might be considered as one of the standard packages.

Summary

All in all, although honey prices in many instances are extremely low, we do not believe that beekeepers need to be disappointed at the movements of honey nor with the prices compared with other farm products. While the production was small this year, the consumption, we believe, has been the equal of any year recently, and with the added difficulty of very light exports it appears to us that the honey movement is very satisfactory indeed. In fact, we would not be surprised if when the cold weather came on and the real heavy demand for honey came that it might not clear up what extra honey was left in the hands of producers very shortly and perhaps tend toward a stiffening in the price. Of course, we all know that in this period prices are very low and that any stiffening of such prices may be accompanied by a lessening in demand.

One very encouraging sign has been the demand for amber honey on the part of bakers. In several instances this has meant a shortage on the part of some producers who were selling their crop direct to bakers. As a matter of fact, if all beekeepers could continuously keep their own local market supplied and their own connections with bakers supplied by purchasing honey from outside, we do not believe that there would be any possibility of holding over of any part of the crop. The difficulty with honey distribution always has been that we do not have sufficient to work through the regular channels all the time and that our methods of distribution from the producer direct to consumer are faulty. Once this can be corrected, we believe that at least 25 per cent and perhaps 100 per cent more honey can be sold.

We cannot refrain from commenting on the encouraging reports of possibilities for next year. In nearly all instances bees are going into winter in satisfactory condition, and with the exception of a section in the southern part of Florida we believe that every section of the United States has had abundant moisture and that clover plants look unusually good for 1932. Of course, it is a long way yet to the honey producing season and continual freezing and thawing weather may have quite a large bearing, particularly on the clovers, but we do believe that prospects look flattering this year for the 1932 season.

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Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

BEES AND QUEENS

TO TRADE—Package bees and queens for white extracted honey. T. W. Burleson & Son, Waxahachie, Texas.

TESTED QUEENS—75 cents each. Send queens anywhere. Order now. D. W. Howell, Shellman, Ga.

THOSE fine packages, shipped on combs drawn from Dadant's wired foundation, will be ready. See advertisements July and August. Jes Dalton, Kenner, La.

PACKAGE BEES AND QUEENS—Write for prices. Jasper Knight, Hayneville, Ala.

WRITE for new low prices on mountain Caucasian bees and queens; also booklet on description and management. Bolling Bee Company, Bolling, Ala.

FOR SALE

FOR SALE—100 colonies of Italian bees, 200 comb honey supers, 100 extracting supers with drawn comb. All combs built from full sheets foundation. Will guarantee free from disease. The first reasonable offer takes them. Bert Gander, Bayard, Iowa.

FOR SALE—175 two-story colonies, on their stands; painted hives, full sheets wired foundation. Health certificate. L. L. Ferebee, Pineland, S. C.

OLD BEE BOOKS—Big reduction in prices; 33 1/3% off list prices in lots of 25 or more. Corresponding discounts on smaller lots. John F. Hawkins, Box 203, Chester, Pa.

ADMINISTRATOR'S SALE—500 colonies of bees, Caucasian strain, amply equipped for chunk and extracted honey. Clean. Colorado locations, excellent white honey district. George Miller, R. 1, Littleton, Colo.

HONEY FOR SALE

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York.

FOR SALE—White clover honey in 60-pound cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

HONEY FOR SALE—All grades, any quantity. H. & S. Honey and Wax Company, Inc., 265 Greenwich St., New York City.

FOR SALE—Extra choice white clover honey, case or carload; also amber. David Running, Filion, Mich.

FOR SALE—Northern white, extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

WHITE clover extracted honey. Write for prices and samples. Kalona Honey Co., Kalona, Iowa.

NEW CROP shallow frame comb honey, also section honey; nice white stock, securely packed, available for shipment now. Colorado Honey Prod. Ass'n, Denver, Colo.

CLOVER honey, choice, ripened on bees. Satisfaction guaranteed. Case or quantity. E. J. Stahlman, Grover Hill, Ohio.

NEW CROP shallow frame extra white comb honey in carriers or car lots, ready for shipment now. T. W. Burleson & Son, Waxahachie, Texas.

FOR SALE—Sweet clover extracted honey; quality and body fine. Thomas Atkinson, Route 5, Omaha, Neb.

HONEY—We sell the best. Comb in carriers of eight cases each; extracted, basswood, buckwheat, sweet clover, white clover and light amber. Tell us what you can use for prices. A. I. Root Company of Chicago, 224-230 West Huron St., Chicago, Ill.

STOLLER'S EXCELLENT quality clover honey, comb and extracted. Unexcelled. The Stoller Apiaries, Latty, O.

HONEY FOR SALE—Keep your customers supplied with honey. We can furnish white and light amber honey at attractive prices. Packed in 60-lb., 10-lb. or 5-lb. tins. Dadant & Sons, Hamilton, Illinois.

HOWDY'S HONEY—Best quality clover extracted, at reduced price. Howard Potter, Jr., Beekeeper, Ithaca, Mich.

FOR SALE—Extracted sweet clover honey, 7c a pound F. O. B. Montgomery, Ala., and basswood-clover honey, 8c F. O. B. Menomonee, Wis. In 60-lb. cans, two to the case. M. C. Berry & Co., Box 697, Montgomery, Ala.

FOR SALE—White clover honey in sixties, 7c per pound. Joseph H. Hoeft, Ottoville, Ohio.

CAR or less white extracted sweet clover and alfalfa. George Seastream, Moorhead, Minn.

FINE clover honey, extracted. Case or ton. Write amount needed and get prices. L. G. Gartner, Rowan, Iowa.

LIGHT amber honey \$8.00 per 120-pound case. New cans and cases. Sample 15c. Sylvester Legat, Spring Valley, Ill.

FOR SALE—White clover comb and extracted in sixties. C. Ho'm, Genoa, Ill.

FOR SALE—No. 1 clover comb, \$3.50 per case; No. 2 clover, \$2.50. Buckwheat and fall comb, No. 1, \$2.50; No. 2, \$2.00 per case. On a 24-case shipment, 5% discount; 48 cases, 10% discount. For other prices, write H. G. Quirin, Bellevue, Ohio.

AMBER HONEY—In barrels. Peter W. Sowinski, Fort Pierce, Fla.

FOR SALE—Buckwheat extracted honey. Leroy R. Bradley, Meridian, N. Y.

CLOVER EXTRACTED HONEY—Case or carload. Roy Littlefield, Exira, Iowa.

FOR SALE—Comb honey, all grades. Chunk comb in five-pound pails at lower prices. N. B. Querin & Son, Bellevue, Ohio.

FOR SALE—Bulk comb honey in shallow frames or any style container. Fred E. Hyde, New Canton, Ill.

WHITE COMB HONEY—Extracted and chunk. Prices on request. One-pound sample, 15c. F. W. Summerfield, Grand Rapids, Ohio.

GREETINGS 1932, and may you throttle depression's world stronghold and bring peace and prosperity to earth's troubled peoples. The world's greatest health sweets at greatly reduced prices and freight paid 1000 miles. May we hand you a taste of our great line of maple products? Will you say when? Griswold Honey Co., Madison, Ohio, U. S. A.

HONEY AND BEESWAX WANTED

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cents a pound for wax rendering. Fred W. Muth Company, 204 Walnut St., Cincinnati, Ohio.

WANTED—A car or less quantity of white honey in 60-lb. cans. Mail sample and quote lowest cash price for same. J. S. Bulkley, 816 Hazel St., Birmingham, Mich.

WANTED—Car lots of honey. State quantity, shipping point and price. Mail sample. Hamilton, Wallace & Bryant, Los Angeles, Calif.

WANTED—Comb honey. Will pay part cash and the balance in package bees and queens, 1932 delivery. M. C. Berry & Co., Box 697, Montgomery, Ala.

WANTED

WANTED—To buy, in Illinois, bees in either Modified Dadant or ten-frame hives. Also extracting supers for same. Edward Adam, Strawn, Ill.

WANTED—If you have successfully produced the one-fourth size or individual honey combs and can undertake quantity production, please address with particulars, Comb Honey, Room 506, 6 East Lake Street, Chicago.

POSITION WANTED

SITUATION WANTED—Young man, with four years' experience in large apiaries. New York or Texas preferred; other places considered. Gilbert Anderson, Webb City, Mo.

SINGLE man, experienced in bee, poultry and turkey raising, wants work as helper for season 1932. Wm. Falk, Milltown, N. J.

POSITION WANTED—Young man, 22, single, farm training, clean habits, some beekeeping experience, wishes position with beekeeper or rancher in one of Rocky Mountain states. Arthur Pauli, 810 Linwood Ave., Niagara Falls, N. Y.

SUPPLIES

THE DADANT SYSTEM IN ITALIAN—The "Dadant System of Beekeeping" is now published in Italian, "Il Sistema d'Apicoltura Dadant." Send orders to the American Bee Journal. Price \$1.00.

BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Association, Denver, Colo.

FOR SALE—We are constantly accumulating bee supplies, slightly shopworn; odd sized, surpluses, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it. Dadant & Sons, Hamilton, Illinois.

MISCELLANEOUS

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership of the Club, including subscription to the paper, 10/6. The Apis Club, Brockhill, London Road, Camberley, Surrey, England.

MARBLEBOARD BINDER—For back copies of the American Bee Journal. Will hold two years. Keeps your magazines in shape for ready reference. Price only 75c, postpaid. American Bee Journal, Hamilton, Ill.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so, send us a list. American Bee Journal, Hamilton, Ill.

PLANS FOR POULTRY HOUSES—150 illustrations. Secret of getting winter eggs. You need this book. Write for free offer and sample copy of Inland Poultry Journal, 623 Holliday Bldg., Indianapolis, Ind.

AUTOMATIC SWARM TRAPPER—Practical, efficient. Literature free. Vikla Manufacturing Co., Lonsdale, Minn.

GROW VITEX TREES for beauty and bees. Twelve- to 24-inch trees, 30c each; twenty-five or more at 25c each; 24- to 36-inch trees, 50c each; twenty-five or more, 40c each, all prepaid. Seed at \$1.50 per ounce. Joe Stallsmith, Galena, Kansas.

PLANT VITEX THIS SPRING—10% deposit books your order. Don't lose another season; time past is money lost. 12- to 24-inch trees, 50c each; thirty-one or more, 30c each; 25- to 36-inch trees, 60c each; thirty-one or more, 40c each. Vitex seed, \$1.50 per ounce; trial packet, 200 seeds, 25c, all prepaid. Charles Mottet, Webb City, Mo.

Send Your Institute Honey Donations to These Receivers

These individuals and firms have agreed to take in honey donated to the American Honey Institute, sending a check to Russell H. Kelty, treasurer of the American Honey Institute, East Lansing, Michigan, for the value of the honey at the market price, less the freight:

Honey Receivers

Allen Latham, Norwichtown, Conn.
Bee-Kist Products, Inc., 8272 Jefferson Street, Phoenix, Ariz.

A. G. Woodman Company, Grand Rapids, Mich.

Dadant & Sons, Hamilton, Ill.

James Gwin, Department of Markets, Madison, Wis.

Lothrop Nursery Company, Aberdeen, S. D.

T. W. Burleson, Waxahachie, Tex.

O. S. Bare, Extension Entomologist, College of Agriculture, Lincoln, Neb.

Sioux Honey Association, Sioux City, Iowa.

H. M. Krebs, Sacramento, Calif.

George C. Barton, Meriden, N. H.
Colorado Honey Producers' Association, Denver, Colo.

Above receiver nearest you is to be notified of the number of pounds you contemplate sending in before shipment is made.

Queen-Rearing for the Commercial Beekeeper

(Continued from page 17)

more easily without a lot of "fuss and frills" than most of the bees we ship in or run helter-skelter in our yards.

In his yards in Colorado and Wyoming there is always developing a surplus of bees which are sold. During the spring of 1930 Mr. Rauchfuss shipped in a number of packages of bees to compare with his own. They were supposed to be particularly good. Out of twenty, only two or three survived the first winter, though handled in the same way and alongside of his own bees, which wintered perfectly.

There is a difference in bees—in color, size, tongue length, swarming, gentleness, and so on. But the important points to the commercial beekeeper are gathering nectar and good wintering, and bees differ in this respect.

Variation is the basis of improvement by selective breeding, and yet few commercial beekeepers take advantage of it. For the most part, they let someone else do their breeding, and **not under the conditions in which the bees must work.**

The wonder is that commercial beekeeping has gone so far and survived so well in spite of the neglect of breeding. Competition has not yet forced beekeepers to pay attention to this vital factor.

We should pause and ask the question: How many commercial dairymen could stay in business today without selective breeding? Why, we even legislate the scrub bull from our western ranges these days! Of course, we can't legislate scrub drones out of the air, but it seems possible to drive a good percentage of them out by education.

Perhaps there are good reasons why so few commercial beekeepers in the North have practiced selective breeding. I suspect that chief among them is the fact that most beekeepers look on queen-rearing as an art for the expert. It seems difficult. There is so much detail and so much equipment, all of which appears somewhat mysterious, or else a big nuisance.

A second barrier is the fact that the commercial beekeeper may not feel that queen-rearing fits in with his regular work. If a definite system has been worked out, the beekeeper finds himself very busy throughout the season. To "fiddle" with queen-rearing introduces an extra practice, seemingly hard and time consuming. It is so much easier to buy queens already reared and mated, ready to introduce.

Many commercial beekeepers have seriously thought of raising their own queens, but figure it would be cheaper to buy them. When prices range between 50 and 75 cents each, certainly it is cheaper to buy them. The individual beekeeper operating a small queen-rearing outfit for himself cannot raise queens as cheaply as the southern breeders. Neither is he favored with as good weather conditions for queen-rearing, as the season is much shorter. The southern breeder can and always will be able to raise queens cheaper. And southern breeders are paying more attention to the quality, yet they cannot do selective breeding for your particular conditions. You can do that only in your own yards. The first cost is not everything. It's the net profit that counts.

It is the purpose of this article to describe the developments in the

Rauchfuss system of queen-rearing which eliminate these barriers and make queen-rearing practical. Most of the details and special technique are removed. The system can be made to fit into already established practices, with little additional labor. The cost will compare favorably with that of purchased queens.

Any system of requeening that is worth while must presuppose selective breeding. Selective breeding means keeping records. They need not be elaborate. A 4x6-inch card thumb-tacked to the top of the inner cover will hold enough records for the average season. It will take little time to make a few simple notations that will be extremely valuable.

In our work at the University, three major factors are taken into consideration: First, the rate and seasonal time of egg production of the queen. This, of course, cannot be done by the beekeeper. Second, the net production per colony. We keep this accurately. The beekeeper need not keep it so accurately. A simple record of the number of supers and their approximate weight, or any rough estimate of production may be sufficient.

Third, we compare the fall strength with the spring strength of each colony, and its ability to build up, in order to judge its success in wintering. There is a big variation in the wintering propensity of bees. The beekeeper should take advantage of this fact. A simple notation in the fall and spring will eliminate undesirable colonies.

Minor characteristics may be noted from time to time. Some colonies will be eliminated because of their temperament. Some beekeepers wish uniform color or size, but how silly these are when compared with production and wintering, under commercial conditions.

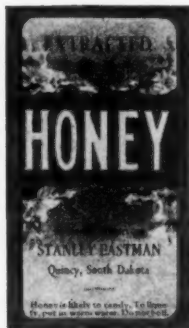
I doubt the wisdom of raising queens from just one or two seemingly superior colonies out of each hundred. It is better to use a larger number, for often it is hard to determine over a season or two just which ones are best.

It is not a "sure bet" that the offspring from a seemingly "buster" colony will be good. If the simple records suggested are taken, it becomes easy, when the spring is well advanced, to go over the yards quickly and mark out about one-third of the best colonies, satisfactory for rearing queens. If this practice is followed year in and year out, progress is bound to result.

The Rauchfuss system of breeding and systematic yard requeening began with very simple practices. At the beginning of the main honeyflow new queens are started in all colonies sufficiently strong, those that had eight or more frames of brood.

At this time the queen has access

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to two hive bodies, and if the brood is fairly equally divided between them, so much the better. If not, the brood in the two hives is equalized, making sure that there are either eggs or young larvæ in both. No attention is paid to the location of the queen. If the queen-cells are present in any of the colonies, they are cut out.

The colonies are then "split." This is done by supering up on the lower hive body of brood and placing the other hive body of brood above the supers and over an excluder. An inch auger hole in the back of the upper hive body forms the exit for this portion. It makes no difference whatsoever where the queen is. That will be determined later and without the time consuming process of looking for her.

The second move is made in eight days. The queenright portion of the colony is located and at once set off on a new stand next to the parent. Only the young bees will stay with her and the field force will be entirely retained by the parent.

Now comes the important step of **selective breeding**. The best colonies in the yard have been marked. The queen-cells in the colonies not marked are cut out. Queen-cells are then introduced from the marked colonies. So, the poorer stocks of bees are gradually eliminated.

Two weeks later the colonies are examined for queenrightness. In any cases of failure the colony with the old queen is merely set back on the parent colony.

It is noteworthy that this simple procedure not only systematically re-queens the yard with better and better queens, but it also eliminates swarming during the early part of the honeyflow.

From this system, which has been used for years and is still in use, has developed the "Rauchfuss nucleus bottom board." I will describe this piece of equipment.

The illustration will give the general idea and construction. These bottom boards may be made for either eight- or ten-frame hives. The major principle is that the nuclei are largely cut off from the parent colony so they will be normal and yet bees can come and go from the parent colony below as they choose.

In the picture the bottom boards are made with a spiral wire coil of worker beeway size inserted at the back of the board. The principle is this: If a single strip of excluding zinc is nailed over this slot for the passageway, the bees pass through so readily that it has been found there is not always a natural reaction in the nuclei to their queenless condition. The slowing down of their easy passage from the colony to the nuclei takes care of this. The spiral wire is for this purpose.

However, a spiral wire is not necessary—it is just a convenience. Before he used it, Mr. Rauchfuss simply nailed a strip of excluder zinc on either side of the slot, giving double exclusion. In fact, some bottom boards originally were made with only a beeway slot sawed in them.

It will be noted that strips are nailed on the bottom board upon which the division boards separating the nuclei rests. With standard equipment, these strips may be left out and the division boards made deep enough to rest on the bottom of the bottom board. We used the strips because of closed end bar supers which had retaining plates extending inside the ends of the supers, as shown, upon which the division boards rested.

Now, the nuclei may be made up from whatever kind of supers the beekeeper uses. The only other piece of extra equipment in addition to the bottom board is the division board. The size of these depends upon the size of the super used, of course. It is simply necessary to make them so there is no bee passageway from one nucleus to another.

Two division boards for each super will then divide it into three nuclei. If the supers are eight-frame size, three nuclei with two frames each may be made, or one of them may contain three frames. Likewise, the ten-frame super may be made up of three-frame nuclei.

It makes little or no difference about the depth of the supers. There is very little extra equipment therefore necessary. Of course, the queen breeder using this system will naturally use shallow supers to conserve space.

As shown in the picture, the outlet for the center nucleus is made from the nucleus bottom board. Those for the other two are made by boring a hole in the sides of the super towards the back.

In making up the nuclei, one good frame of brood and bees and another of honey and pollen with some bees adhering are drawn from the brood nest of the colony over which the nuclei are placed. These should be drawn while field bees are out, so that largely young bees will be in the nuclei and will establish their location instead of returning to the parent colony.

If sealed brood is raised, no further handling is necessary; but if young brood is taken, then one should wait until queen-cells have been started and cut these out, if queens are not desired from the colony from which the nuclei are made.

Two important things should be borne in mind: In the first place, the nuclei should be placed over the strongest colonies; otherwise they may be deserted, the bees going

down to the parent colony rather than the other way, as desired. I should note here that in climates with cold nights this is more apt to occur than otherwise.

In the second place, there should be a fairly good honeyflow when nuclei are run this way. During the past season, when there was a crop failure in Mr. Rauchfuss' yards, there were a large number of failures over colonies with mated queens. On the other hand, they mated normally over full colonies with virgins.

The application of this method and the ease with which it may be used to rear queens is apparent. The time for the operation will depend on local conditions. Some raise queens on dandelion or other early season nectar. Others may have to wait until about the beginning of the main honeyflow. In any event, it becomes a simple procedure.

If about a third of the colonies have been marked for queen-rearing, from the records kept as already suggested, young brood and bees may be raised into the nuclei and set right over the parent colony. They are simply allowed to make their own queen-cells and the grafting process is eliminated. The queens are reared and mated at no expense of bees. When they are mated they can be taken out, the nucleus bottom board drawn, and all the bees are still at home.

A second generation of queens may be run in the same nuclei, if desired. If queen-cells or virgin queens are to be placed in these, of course all young brood must be taken out and substituted with sealed brood. If the nuclei are left to make their own queen-cells, then they may merely be left queenless; or if another queen-mother source is desired, the young brood may be removed and replaced with brood from that source.

In any event, the entire process is so simple that anyone can make it work when conditions are right. In addition, little expense is tied up in equipment and the labor is small. In other words, the drawbacks to selective breeding and systematic queen-rearing are largely removed. So this system is particularly adapted to use by commercial beekeepers. But it does not take the place of the practice of the commercial queen breeder.

Of course, the system may be used to rear queens more extensively than suggested. If so, it requires two to three times more bees per nucleus than described. However, it has, for some, the advantage of great simplicity. In the pictures, it will be seen how one super may be put on top of another for more intensive breeding.

"I Didn't Get Much Honey—But Here's My Check"

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for \$4.56 for the Institute. I didn't get much honey this year as the season was too dry. About three tons of comb honey, or near that. Not enough beekeepers are getting behind the Institute. Several hundred could and should support it, right from this state, and I wonder *what is the matter with them?*"

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There is now no question about the soundness and the effectiveness of the way in which American Honey Institute gets behind your honey. Letters from beekeepers, associations, honey distributors and honey users, from practically every state, prove this value

But the work cannot go on without just the kind of help Mr. Moberg gives. The time has come to decide the future of the Institute. *It will be decided* at the annual meeting of American Honey Institute at Columbus, Ohio, January 25. If you expect the Institute to continue to work for you, make good use of this coupon now so the directors will say—*go ahead.*

Basis of Support — Honey or Money.
Honey equal to one-half of one per cent of your crop — Money, \$1.00 per ton—either way, take your choice, but use the coupon now. (Send honey to any of list of receivers on page 37)

AMERICAN HONEY INSTITUTE,
225 WIMMER BUILDING,
INDIANAPOLIS, INDIANA.

I pledge my support to the work of the American Honey Institute for 1932. Enclosed is my check for _____ herewith. I have sent _____ pounds of honey to _____ who will send value in money to you. (Name receiver.)

Name _____

Address _____

(Mail to American Honey Institute, 225 Wimmer Bldg., Indianapolis)

The POSTSCRIPT

GOSSIP ABOUT THE OFFICE IN THE MAKING OF THE MAGAZINE

Loss of Goodwill

The object behind the work of the American Honey Institute is to build up goodwill for honey on the part of the public. The value of such contacts is inestimable. How easy it is to upset the best laid plans is illustrated by the recent advertising of a well known antiseptic. Large space advertising recently appeared in the magazines with the heading "Eggs—they tear you down socially." The thought was only to sell more mouth wash and there was no intention of doing any harm to the poultry industry. Millions of people read the ads and as a result many reduced the number of eggs in their diet to avoid upset stomachs and bad breath. As a result the manufacturers of the product advertised lost the goodwill of the entire poultry industry and probably lost more business than they can regain by many months of advertising. Too bad for the poultrymen and too bad for the advertiser. Goodwill is the most valuable asset of any industry and great care should be used to foster it.

Hair Snakes

The damage that ill-advised publicity can do is well illustrated in the case of hair snakes. These small worms are often found in cabbages. They do not eat cabbage, but spend a portion of their lives within the bodies of grasshoppers or other insects as parasites. In the autumn they often emerge from the body of their host while it rests on the cabbage. Soon they leave the vegetable to burrow into the ground. Baseless press stories about hair snakes in cabbages have resulted in immense loss to growers of that vegetable on some occasions. It is reported that 85 per cent of the crop in one important cabbage growing section of a southern state was thus lost. Beekeepers suffer similar injury from the stories about bee diseases that appear in the newspapers from time to time.

Opportunity

Far-sighted men are taking advantage of the present depression to pick up bargains such as are not likely to be available again for many years to come. A visitor to this office recently told of attending a sale early last summer where a good-sized apiary was offered. He made a low bid and got the outfit for a song. This year's crop paid for the entire apiary, with several hundred dollars besides. Thus by one good business stroke he put himself farther ahead than he would ordinarily do by years of labor. Industrious young men are buying farms at prices below the cost of the buildings and on terms which will enable them to pay out from crops raised on the land without difficulty. The man who knows what he wants can find better chances to buy now than will come again for a long time. The man with foresight and courage can lay the foundation for a comfortable business now with little capital. The time to buy is when everybody wants to sell, and likewise the time to sell is when things are booming and everybody is anxious to buy at high prices.

Poisoning the Bees

On page 24, Rambler II tells his experience with poison. The writer has visited a number of beekeepers in different states who have suffered similar distressing experiences. The wholesale use of poison in the spraying of fruit trees and in some localities the cotton fields is making a serious complication for the beekeeper. There are times when poison seems necessary to control pests, but its use is becoming entirely too general, since too often it kills other animals than those for which it is intended.

Our Biological Survey, which started out to be a conservation agency, has become a menace in many localities

by the wholesale poisoning of rodents and other animals. Thousands of useful animals and birds are killed by such poisoning, much to the damage of the public. Unless the Biological Survey calls a halt on such activities, they will soon find themselves confronted by a vigorous campaign to reduce their appropriations or restrict their activities. Poison, like fire, is a useful servant, but a bad master.

Cause of Swarming

On page 20, Jes Dalton takes issue with Editor Demuth on the cause of swarming. Personally, I have the greatest respect for Demuth's opinions and regard him as one of the best living authorities on bees. However, I cannot accept his conclusions that a crowded brood nest is the cause of swarming. If that is the cause, how do we account for the fact that bees so often give up the swarming impulse during a heavy honeyflow? At such times the brood nest is crowded with emerging bees, while the queen is greatly restricted for room. We often find the least swarming at times when colonies are most crowded, as Dalton describes. Every beekeeper of experience can verify Dalton's story.

Watch Minnesota

The article in this issue telling of the use of chlorine gas for treating American foulbrood is sure to interest a large number of readers. Experiments indicate that when properly applied the new method is dependable for control of brood diseases. Let us hope that it will be possible to develop a fool-proof method of application that anyone can use. The number of failures with other methods has made burning appear to be the only practical means of control. If a way can be found to control the disease and save the equipment it will be a life saver for the industry. The enormous losses that have resulted from disease have been a serious handicap, but no way has previously been found to avoid them. Let us hope that this new method will not prove to be just one more disappointment.

Honey Jelly

Considerable interest has developed in the honey jelly article from the promise made by the Observer in our last issue. Any new use for honey arouses the interest of the beekeeper nowadays.

Scout Bees

That little article on scout bees on page 19 will bring up memories in the mind of every beekeeper. To see bees working in a hollow tree or a cavity in the wall for a few days before the arrival of a swarm is such a common occurrence that all bee men are familiar with it.

The Turk's Bees

That article by Disbrowe about his visit to the old Turk arouses a bit of envy here. I think that we would all enjoy such a visit. Beekeepers have much in common the world around, and the stranger who loves bees is likely to be welcomed wherever an apiary is found. The story reminds me of a visit which I made to a Mexican village where a large number of bees were kept in boxes open on one side. The combs were all cut out and melted up once or twice a year and the bees put back in the boxes to start all over again. I could not understand a word of the language of the owners, but with the help of a translator I had a wonderful time and told the story in this Journal many years ago.

Those Toppers

Everybody tells the same story about those top-entrance hives. They all dislike the wild flight of the bees when the hive is taken down to add supers or remove surplus honey. In the usual hive with the entrance at the bottom there is no interference with flight even though half a dozen supers be removed.

FRANK C. PELLETT.

One Inspector Says Fruit Man Has the Best of the Bargain

Beekeepers lose more from foulbrood than the cost of cleaning up their bee yards and the scattered colonies in their communities, according to W. A. Dunlap, of Toppenish, president of the Yakima County Beekeepers' Association. Mr. Dunlap is of the opinion that beekeepers make no money from placing bees in orchards for purposes of pollenization. The colonies often become infested with foulbrood, his experience has indicated.

By Z. L. Neill, Washington.

(We can see no reason for this. The colonies need watching everywhere.—Editor.)

Early Division to Increase Crop

Dividing colonies early in the spring sometimes results in good pay for the labor involved. The increase made in April often turns out very well, each division being practically equal to an over-wintered colony at the time of the honeyflow. To be successful, it is necessary to make the division about the middle of April, which is often a poor time to work with bees.

However, if this plan is to be repeatedly successful, it is necessary to have good wintering and normal spring weather. We have had excellent success with the plan whenever the spring has been at all favorable, the crop from each division being fully as great as from colonies not divided, thus increasing the crop for spring count 100 per cent.

Geo. S. Demuth, Editor,
Gleanings in Bee Culture.

Kellogg Scores Again

Under the direction of E. J. Freeman, advertising manager of the Kellogg Company, large window and counter display cards were made, with large blue lettering and yellow background, the card measuring 11 by 14 inches, bearing these words: "National Honey Week, November 9-14." "Use More Honey in Cooking and with Kellogg's Cereals." These were used prominently in a great many places. We used them in our own display work and we found grocers very much interested in them because they tied up two of the products handled by the stores. This kind of cooperation is wonderful.

A letter from Mr. Freeman tells us that the field men of the Kellogg Company were instructed to place jars of honey from the dealers' stocks in all Kellogg windows during Honey Week, so that the great display effect for honey was increased tremendously by this effort.



That "Chewy" Center Calls the Customer Back

When you bite into a fine looking section of comb honey or of bulk comb, you bite right through the center--right through a heart of *comb foundation*. Is it a delicate chewy part that puts finish on the bees' work?

DADANT'S SURPLUS FOUNDATION tastes as good as the rest of it. It sends the customer

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Lewis Beeware and Dadant's Foundation at Catalog Prices

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Their Culture and Requirements

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Over 100 black and white halftone illustrations, the majority of which were made from photographs specially taken for the book in the author's wild flower preserve. Four exquisite 4-color plates.

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Prices postpaid with name and address, etc.:
100, \$2.00; 250, \$4.25; 500, \$7.50; 1000, \$11.50

Each additional 1000, \$9.75

EIGHT PAGE HONEY FOLDER "Sweetheart of the Flowers"

Short description of what honey is, how produced, harvested. How to keep it, and other data of general interest. A full page of honey recipes included.

PRICES

100	----	\$1.00	250	----	\$2.50
500	----	4.50	1000	----	8.50

Extra for printing your name and address:
250 or less, 95c; 500, \$1.25; 1,000, \$1.90

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1932?

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Thanking you for all past favors, and soliciting your continued patronage on the basis of complete satisfaction in your bee and queen purchases, we extend to you best wishes for a Happy and Prosperous New Year.

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